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OF THE

University of Vermont

AND

STATE AGRICULTURAL COLLEGE

BURLINGTON VERMONT

1899-1900

BURLINGTON
FREE PRESS ASSOCIATION
PUBLISHERS PRINTERS AND BOOKBINDERS
1899

CALENDAR-1900

JANUARY.

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PERIODICALS WANTED

The following list of volumnes needed to complete our files of periodicals is printed in the hope that some of our friends may be willing to supply our deficiencies from the accumulations in their attics:

Academy (London), v. 23-30; American Architect, v 1-18; American Naturalist, v. 1, 6-11, 13-19; American Presbyterian Review, v. 1-11; Appleton's Journal, old series, v. 1-17; Arena, v. 1-4, 15-date; Athenæum (London), 1892; Baptist Quarterly, complete; Barnard's American Journal of Education, complete; Blackwood's Magazine, v. 1-5, 9-38, 51-54, 61-64, 68, 92; British Quarterly Review, v. 1-52 Catholic World, v. 1-10, 14-16, 18, 20-41, 45-46; Charities Review, complete; Christian Examiner, v. 5-6, 16, 20-21, 25-34, 37-41; Critic (N. Y.), old series, v. 1 &2; Democratic Review, v. 4-6, 12, 15, 19, 28-29, 32-43; Dial (Chicago), v. 1-11; Eclectic Magazine, v. 1-15, 64, 66-date; Electrical Engineer, v. 1-10; Electrical World, v. 1-16: Electrician, v. 1-28; Harper's Weekly, v.4-12, 25-29; Lippincott's Magazine, complete; Literary World (Boston), v. 1-9; McClure's Magazine, complete; Macmillan's Magazine, complete; Methodist Magazine, v. 1-11; Methodist Quarterly, v. 1-22; Missionary Review of the World, old series, v. 1-10; Nature, v. 3-32 and Jan.-Oct., 1894; New England Magazine, old series, v. 1-6; New Review, complete; North British Review, v. 38-43; Public Opinion, v. 1-5; Railroad Gazette, v. 1-30; Review of Reviews, v. 1-3; Saturday Review, complete; Scientific American, v. 1-29; Scientific American Supplement, v. 1-2; Scottish Review, v. 1-8: Southern Quarterly Review, v. 1-7, 14-1856; Spectator, v. 1-57; Westminster Review, v. 1-19.

Gifts of these magazines, either in volumes, bound or unbound, or in separate numbers, will be appreciated. Expressage will be paid or postage refunded, if the donors wish.

Library, University of Vt., December, 1897.

HISTORY AND CHARTERS

"An Act for the purpose of Founding a University at Burlington," was passed by the Legislature of Vermont, Nov. 2nd, 1791, of which the following are the Preamble and First Section:

"Whereas the education of youth is necessary for the advancement of morality, virtue and happiness, and tends to render a people or State respectable; to promote which, establishments for Seminaries and Colleges have ever been patronized by all good governments; and whereas several grants of land have already been made by the State and private liberal donations have been offered, for promoting so needful an establishment within the same, which demand the attention of this Legislature for laying the foundation for an institution so beneficent to society; therefore,

Section I. It is hereby enacted by the General Assembly of the State of Vermont, that there shall be and hereby is a College instituted and established at such a place in the township of Burlington in the County of Chittenden as the Corporators hereinafter named shall think most convenient for that purpose, to be known and designated by the style of THE UNIVERSITY OF VERMONT."

A subsequent Act gave the Corporators of the University "full power, right, and authority to appropriate to the use and benefit of the said University forever all such lands as have been already granted and reserved by the authority of this State for the use and benefit of a College."

The Act of Incorporation vested in the Trustees of the University of Vermont full power "to appoint, elect, support and remove from time to time, all such officers and servants as they shall find necessary; to direct the studies of the youth; to establish professorships and professors, and provide for their support; to make and establish all necessary rules, regulations and by-laws for the orderly government of said University (provided always that the said rules, regulations and by-laws shall not tend to give preference to any religious sect or denomination whatsoever); to grant and confer all such degrees, literary titles, honors and other distinctions as other Universities, Colleges or Seminaries have done or may of right do; and to do

any other thing which shall be found necessary for the government and welfare of such an institution."

With the consent of the Corporation certain changes were made by the Legislature in respect to the number and the mode of election of the trustees of the University by Acts passed Nov. 2nd, 1810, and October 31st, 1823; but these were, with like consent, repealed by the Act of October 30th, 1838, which revived and confirmed the provisions of the original charter, which charter remains in full force at the present time, with such modifications as the Corporation of the University accepted in 1865, in accordance with the provisions of the charter of The University of Vermont and State Agricultural College.

In 1862, largely through the exertions of Hon. Justin S. Morrill, then Representative and since Senator from Vermont, Congress passed an "Act donating public lands to the several States and Territories which may provide colleges for the benefit of Agriculture and the Mechanic Arts." Under the provisions of this Act, the Legislature of Vermont chartered in 1862 the Vermont Agricultural College, which, failing to receive the support necessary to put it into operation, was by an Act approved Nov. 6, 1865, incorporated with the University of Vermont into one institution by the name of "The University of Vermont and State Agricultural College." This corporation is invested with the property, rights, powers and privileges which belonged to both or either of the corporations so combined, and "shall be and remain a body corporate forever, for the purpose of carrying out the objects contemplated in the respective charters" of the two institutions.

The "objects contemplated" in the charter of the Vermont Agricultural College are stated in the exact language of the Act of Congress providing for Colleges of Agriculture and the Mechanic Arts, as follows:

"The leading object shall be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic

arts, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions in life."

The objects contemplated in the charter of the University of Vermont are stated in the Preamble and Sections as given above.

The charter of the University of Vermont and State Agricultural College requires that "there shall, at all times, be maintained in the institution hereby created such instruction in the various branches of learning as is contemplated in the several charters of each of the institutions hereby united; and more particularly including a four years' course of studies, similar to such as are generally taught in other colleges and not inferior to that recently taught in said University of Vermont; and in addition to that which is usually taught in other colleges, the instruction in this institution shall include such enlarged facilities, and extended scope and variety in the study of those branches which relate to military tactics, agriculture and the mechanic arts, as shall render the whole instruction in conformity with said Act of Congress, as well as with the several charters aforesaid."

Section II of the Charter provides that, for the purpose of receiving property by gift, grant, bequest or otherwise, and for certain other purposes therein specified, each of the original corporations shall be deemed and treated as having continued in life.

Gifts and bequests may therefore be made to (1) the University of Vermont, (2) The Vermont Agricultural College, (3) The University of Vermont and State Agricultural College.

By the provisions of

"An act to apply a portion of the proceeds of the public lands to the more complete endowment and support of the colleges for the benefit of agriculture and the mechanic arts, established under the provisions of an Act of Congress approved July second, eighteen hundred and sixty-two," the institution receives from the United States Treasury an annual appropriation to be applied "only to instruction in Agriculture, the Mechanic Arts, the English language, and the various branches of mathematical, physcial, natural, and economic science, with special reference to their applications in the industries of life, and to the facilities for such instruction."

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Instruction is given in the University in

I. The Department of Arts, which embraces

1. The usual Classical course in Languages, ancient and modern, Mathematics, Physical Science, Mental, Moral and Political Philosophy, Rhetoric, Literature and History, leading to the degree of *Bachelor of Arts;*

2. The Literary-Scientific course, in which the studies of the Classical course are pursued with the exception of Greek, and which leads to the degree of *Bachelor of Philosophy.*

II. The Scientific Departments, embracing the studies required (1) by the Morrill Act of 1862, which provides that instruction be given not only in "Classical and other Scientific studies," but especially in "branches of learning relating to Agriculture and the Mechanic Arts;" and (2) by the Endowment Act of 1890, which provides for instruction in "Agriculture, the Mechanic Arts, the English Language, and the various branches of Mathematical, Physical Natural and Economic Science, with special reference to their applications in the industries of life."

These Departments are:

1. The Department of Engineering, which includes (a) Civil and Sanitary Engineering; (b) Electrical Engineering; (c) Mechanical Engineering.

2. The Department of Chemistry.

3. The Department of Agriculture.

The degree in each case is *Bachelor of Science;* see Index, *Degrees.*

III. The Department of Medicine, leading to the degree of *Doctor of Medicine.*

ADMISSION

Candidates for admission to the University must produce satisfactory testimonials of good moral character and must be at least fifteen years of age.

Students coming from another college must present certificates of regular admission from the institution they have left, and furnish satisfactory evidence of proficiency in all the studies—or their equivalents—which have been pursued by the class they propose to enter. For admission to an advanced class, a corresponding increase of age is required, and a thorough knowledge of all the studies which have been pursued by the students of the same class.

Young women are admitted to all courses in Arts and Science upon the same conditions as young men. They are required to room and board with families approved by the Faculty.

Requirements for Admission to the Classical Department

Greek. (1) Greek Grammar, including Prosody; (2) Xenophon's Anabasis, four books; (3) Homer's Iliad, three books; (4) Woodruff's Greek Prose Composition, or prose work based upon the Xenophon read in class; (5) translation at sight.

Latin. (1) Latin Grammar, including Prosody; (2) Cæsar, four books, or Second Year Latin [Ginn & Co., 1899], or First Latin Readings by Arrowsmith and Whicher; (3) Cicero, six orations including that for the Manilian Law; (4) Virgil, six books of the Æneid and the Eclogues [or in place of the Eclogues, 1200 lines of Ovid]; (5) Prose Composition, forty lessons; (6) translation at sight.

In the case of Latin and Greek authors substitutes will be accepted if full equivalents for the work here prescribed.

Teachers are urgently requested to give their pupils practice in reading at sight. They are also urged to have their pupils read aloud in both Greek and Latin as much as possible, that the ear may be

trained to the sound of the language, and that the words may gradually come to convey a meaning to the pupil's mind immediately and not through their English equivalents.

In the pronunciation of Greek, the rules of Hadley and Allen's Grammar, pp. 4, 5, 7, should be followed. The "Roman" method of pronouncing Latin is used in the class room.

Mathematics. (1) Arithmetic, including the metric system; (2) Algebra, through Quadratic Equations; (3) Plane Geometry.

English. (1) English Grammar; (2) Orthoepy; (3) English Composition, to be based for 1900 upon the following works: Shakspere's Merchant of Venice; Milton's Paradise Lost, books i and ii; The Sir Roger de Coverley Papers in the Spectator; Goldsmith's Vicar of Wakefield; Coleridge's Ancient Mariner; Scott's Ivanhoe; Cooper's Last of the Mohicans; Macaulay's Essay on Addison; Lowell's Vision of Sir Launfal; George Eliot's Silas Marner.

For 1901 upon the following: Shakspere's Macbeth and Merchant of Venice; Milton's Comus, Lycidas, L'Allegro and Il Penseroso; Pope's Iliad, i, vi, xxii, xxiv; Sir Roger de Coverley Papers in the Spectator; Goldsmith's Vicar of Wakefield; Coleridge's Ancient Mariner; Scott's Ivanhoe; Cooper's Last of the Mohicans; Macaulay's Essay on Milton; Tennyson's Princess; George Eliot's Silas Marner.

Geography. Ancient and Modern.

History. (1) Ancient and Classical, down to the Christian Era. Myers' Outlines is suggested as a text-book. (2) English and American; a rapid survey of the chief periods and events. Montgomery's histories are suggested as text-books.

Literary–Scientific Course

The requirements for admission to the Literary-Scientific course are the same as for the Classical course, except that in place of Greek an equivalent in French or German will be required.

Requirements in French. (1) Proficiency in the elements of French Grammar, implying familiarity with inflection (particular attention being given to irregular verbs) and the essentials of French syntax; (2) the ability to translate ordinary French prose at sight. This should be gained by reading, concurrently with the grammar work, at least five hundred duodecimo pages of standard French prose and poetry; (3) the ability to translate easy English sentences into French, to pronounce French, and to recognize French words and phrases when uttered; (4) an elementary knowledge of the history of French literature.

Requirements in German. The following courses are suggested to those who intend to offer German as a substitute for Greek:

First Year. Joynes-Meissner German Grammar and Brandt's Reader; the latter to be followed by as much as can be read of simple works like the Märchen of Andersen, Keller's Dietegen, or Auerbach's Brigitta. *Second Year.* The third part of the same grammar with selections from the Gedichte of Goethe, Schiller and Heine; Schiller's Jungfrau von Orleans and Heine's Harzreise.

In both of these courses the student should be given daily exercises (oral and written) in composition, in the first year translating into German detached sentences, and in the second, simple, connected English prose. Constant dictations in German, as a training to the ear, are recommended. A good collection of phrases is to be found in the Meisterschaft System of Rosenthal, and in Meissner's German Conversation.

The entrance examinations, which will be both oral and written, will presuppose a thorough familiarity with the principles and the practice of pronunciation, with the declension of nouns and adjectives, the conjugation of the regular and irregular verbs, and the essentials of German syntax.

Students who offer French or German for admission will not be allowed to take the elementary work in those languages, and then reckon it as a required study. They may, however, take advanced

work and have it counted. Literary-Scientific students who enter with deficiencies in French or German may make up such deficiencies by taking the elementary work in those languages *in addition* to the required number of studies.

[For the Conditions of Admission to the Departments of Engineering, Chemistry and Medicine, consult the fuller statements of these departments.]

Examinations for Admission will be held in the large hall of the Science Building (second story) at the close and at the opening of each college year. See Calendar. The results of examinations will be reported immediately to the Committee on Admission, who will furnish the successful candidates with Certificates of Approval to be presented by them to the President.

Admission by Certificate

Candidates will be admitted to any of the above Departments without examination, in case they bring Certificates of Graduation from Preparatory Schools whose Courses of Study fully meet the above requirements. If the certificate is defective in respect to any required study, the student will be examined in that study. Certificates must be made out on blank forms furnished by the Registrar. Students admitted by certificate will be regarded as being on probation the first half-year.

Special Examination in English

Every candidate for admission to any undergraduate department of the University will be required, at the time of entrance, to give evidence that he can write the English Language in a legible hand and with correctness in spelling, punctuation and construction. And no student will be admitted as a full matriculant until he has satisfied his examiners by a written test that he has read with care and intelligence the English works named in the "Requirements for Admission" (p. 17) or their equivalents.

Students admitted conditionally will be allowed one year in which to make up all deficiencies. The first two weeks in June are appointed for examination in entrance delinquencies.

Admission of Special Students

Persons of suitable age and attainments may, by special permission of the Faculty and by the payment of a specified fee, pursue certain studies in connection with the regular college classes without becoming matriculate members of the University. The classes which are open to such students, with the conditions of admission, will be made known upon application to the President. Special Students must satisfy the Committee on Admission as to their ability to prosecute successfully the branches which they desire to pursue, and also obtain from the President an order for their admission to the University. They will be registered and enrolled in the same manner as regular students, and from the time of their admission will be entitled to the privileges, and subject to all the regulations of the University, but cannot be candidates for a degree.

Enrolment

All students are required to enroll themselves in their respective courses of study at the beginning of each half-year.

On the first day of the session, from 9 A. M. to 12 M., enrolment cards may be obtained at the room of the Committee on Studies. These cards are to be immediately filled out and submitted to the Committee for their endorsement. When so endorsed they are to be presented by the students to the Instructors for their signatures. The cards must be returned to the Committee, properly signed, within seven days.

Instructors will make up their class lists only from the endorsed cards presented by the students.

Absences will be counted from the first exercises of the studies chosen.

No changes of studies, except such as are sanctioned by the Committee, will be allowed.

Decision regarding the choice of studies should be reached before the opening of the Annual Session. For this purpose, Instructors will gladly advise with students at any time.

Registration

Students intending to enter the University should send their Entrance Certificates or other credentials to the Committee on Admission not later than the week preceding the opening of the Fall term. They will obtain from the Committee Certificates of Admission, which are to be taken, first, to the President for his signature; then to the Treasurer to get his receipt for the Registration fee (see Expenses, *post*). Students are then entitled to enter their names in the Register, and so become regular members of the University.

COURSES OF INSTRUCTION*

[**Letters in heavy face type** signify: **R**, Required; **E**, Elective; **I, II, III, IV**, first, second, third and fourth year of the course; **A**, first half-year; **B**, second half-year. **Figures** in the same type indicate the **number of hours**,† or exercises, per week].

GREEK

1. Lysias, Selections.—Plato, Apology and Crito.—Homer, Odyssey, four books.—Prose Composition, based upon the prose read in the course. **R14**

2. Euripides, Iphigenia in Tauris.—Demosthenes, Olynthiacs.—Aristophanes, Clouds.—Sophocles, Oedipus Tyrannus.—Prose Composition, based upon the prose read in the course. **EII3**

3. Greek Private and Social Life.—The private life of the Greeks will be treated in lectures. Collateral reading and subjects for investigation will be assigned. The aim of the course is to present a picture of the Greeks in their daily life. **EIII&IV** (**II** by special permission) **2**

4. The History of Greek Literature.—The rise and development of the various forms of Greek literature will be treated briefly in lectures. The aim of the course is to encourage the students to read, both in the class and privately, selections from as wide a field of Greek literature as possible. **EIII&IV3**

Courses 3 and 4 will be given in alternate years; course 3 in 1900-1901.

*When not otherwise specified, Courses run through the year.

†The "hour" is fifty minutes, except in laboratory work, where it is an hour and fifty minutes.

5. Aeschines, Against Ctesiphon.—Demosthenes on the Crown.—Aeschylus, Seven Against Thebes.—Sophocles, Antigone.—Aristophanes, Frogs. **EIII&IV3**

PROFESSOR HOWES

LATIN

1. Livy, books i and xxi or xxii.—Tacitus, Germania and Agricola.—Plautus, Trinummus and Captivi.—Terence, Andria.—Prose Composition. **RI4**
2. Cicero, Tusculan Disputations, book i.—Horace, Odes, Epistles and Satires.—Catullus.—Prose Composition. **EII3**
3. Quintilian, books x and xii.—Cicero, Letters,—Juvenal.—Persius. **EIII3**
4. Pliny, Letters.—Seneca, Essays and Medea.—Lucretius.—March's Latin Hymns.—Allen's Early Latin. **EIV3**
5. Prose Composition, Advanced Course. Open to those who have completed Course 2. **1**

PROFESSOR GOODRICH

ENGLISH

1. Elementary Course in Rhetoric, English Composition, and Etymology.—Text-books, Hill's Principles of Rhetoric, and Lounsbury's History of the English Language. **RI2**
2. Criticism and Composition.—Study of Invention and of selected prose masterpieces.—Text-books, Genung's Practical Rhetoric and Rhetorical Analysis.—Constant drill in composition.—Weekly lectures upon the history of English literature, with Stopford Brooke's Primer as a manual. **RII3**

3. English Literature from the Restoration to the present day.—Lectures and seminary work upon the poets and important literary movements of the last two centuries.—Lectures upon the history and principles of English Versification. **E3**

4. Anglo-Saxon.—Training in early linguistic forms and in development of English.—Literary study of Anglo-Saxon Poetry.—Text-book, Smith's Anglo-Saxon Grammar. **EA2**

5. Chaucer.—Supplementary to 4.—Further study of linguistic development.—Chaucer's poetry.—Collateral reading in the works of his contemporaries. **EB2**

6. Shakspere and his Contemporaries.—Elizabethan drama, lectures and collateral reading. Literary study and textual interpretation of selected plays of Shakspere.—Text-books, the Globe Shakspere, Rolfe's editions, and Dowden's Primer. A study of the non-dramatic poetry of the period will complete the course. **E3**

7. American Literature.—The greatest writers of the country and century will be studied. Lectures, reports, and collateral reading. Text-book, Beers' Outline Sketch of American Literature. **E2**

8. Argumentation.—Lectures upon the history of oratory and the principles of debate. Practice in brief-drawing and discussion. **RIII1**

9. The English Novel.—Critical study of masterpieces of English Fiction. **E2**

Courses 6 and 7 will be given in 1899–1900; courses 3, 4 and 5 in 1900–1901. This alternation will enable the student, by a proper choice of electives, to trace through its entire history the linguistic growth and the literary development of English.

Members of the Freshman and Sophomore classes are required to deliver two selected declamations during the year. Juniors follow a course in argumentation, as prescribed above (8). Seniors are required to deliver two original orations and to write two essays during the year.

PROFESSOR TUPPER
MR DOTEN *Elocution*
MR ENO *Rhetoric*

FRENCH

1. Elementary Course.—Grammar, Pronunciation, Composition and Translation. **I4**

Required of Literary-Scientific Freshmen who are conditioned in modern languages, and of Scientific Freshmen who do not present the entrance requirements in German. Elective for Agricultural students, and for Classical Sophomores and Juniors.

2. Scientific French.—Advanced Grammar and Composition; reading of scientific prose. **I3**

Required of Scientific Freshmen who present the entrance requirements in French. Elective for others. The course may be taken two years.

3. French Literature in the Seventeenth Century, alternating with French Literature in the Eighteenth Century.—Advanced Grammar and Composition. **I3**

Required of Literary-Scientific students who present the entrance requirements in French, but not in German, and for Academic students who have taken Course 1. The course may be taken two years.

4. French Life and Culture.—**A.** During the Middle Ages; **B.** During the Renaissance. Lectures, translation in class, themes and collateral reading. **E2**

5. Literary Movements in France in the Nineteenth Century.—**A.** Romanticism and the reaction against the movement. **B.** Present-day tendencies. Lectures, translation in class, themes, and collateral reading. **E2**

6. The Development of Historical Writing in France. Lectures and readings in the French historians. **E1**

7. The History of Literary Criticism in France. Lectures and readings in selected critical essays. **E1**

Courses 4 and 5, and 6 and 7 are given in alternate years and are elective for students who have taken Course 3. 4 and 6 are given this year.

A student in the department of Arts who begins French or German in college is required to continue the study a second year.

PROFESSOR KITCHIN

ITALIAN AND SPANISH

Whenever ten or more students desire it, a course in either Italian or Spanish will be given. Both courses will not be offered the same year, but either is elective for students who have had at least one year of French in college. The course in Spanish is offered for 1899-1900.

1. Italian

   a. Elementary Course.—Grammar, pronunciation, memorizing short poems, and translation from De Amicis : Cuore, and Pellico : Francesca da Rimini. **A3**

   b. Classic and Modern Italian.—Dante : La Vita Nuova, entire ; La Divina Commedia, selected cantos. Verga : La Cavalleria Rusticana ed altre novelle. **B3**

2. Spanish

   a. Elementary Course.—Grammatical principles, pronunciation, and translation of easy literary and scientific prose ; memorizing short poems. Estébanez : Un Drama Nuevo. **A3**

   b. Classic and Modern Spanish.—Cervantes : Don Quixote, selected chapters. Galdós : Doña Perfecta.

PROFESSOR KITCHIN

GERMAN

1. Elementary Course.—Joynes-Meissner German Grammar with written exercises; Brandt's German Reader; Andersen's Märchen; Gedichte: Goethe, Schiller, Heine. Exercises in conversation based on the systems of Rosenthal and Meissner.

Alternative with French 1 for Classical Sophomores, and, by special permission for Literary-Scientific Freshmen who present the French required on p. 18; also for Juniors.

2. Composition.—Joynes-Meissner (part third) with written exercises and exercises in conversation. Fouqué's Undine; Schiller's Jungfrau von Orleans; Heine's Reisebilder; Goethe's Faust (first part) with introductory lectures.

3. a. Lessing's Laokoon and Goethe's Iphigenie auf Tauris will be read in the class. Collateral reading: Schiller's Die Piccolomini; Lessing's Emilia Galotti and Minna von Barnhelm.

b. Lectures. Outlines of German Literature in the Classic Period.

PROFESSOR HUFF

See Note at end of French Courses.

1s. Elementary Course for Scientific students.—Joynes-Meissner German Grammar with written exercises and exercises in conversation (Rosenthal); Van Daell's German Reader; Johannes Walther's Allgemeine Meerskunde. **4**

2s. Advanced Course.—Joynes-Meissner German Grammar (part third) with exercises in Composition; continuation of Rosenthal; Cohn's Ueber Bakterien and Goethe's Naturwissenschaftliche Arbeiten (Helmholtz); current literature in scientific periodicals. **3**

MR ENO

PHILOSOPHY

1. Elementary Course.—Brief general introduction to philosophy, in lectures.—Logic; text-book, Creighton's Introductory Logic.—Ethics; text-book, Murray's Introduction to Ethics. **RIII3**

2. Advanced Course.—Psychology; lectures and Dewey's Psychology; Ladd's Outlines of Physiological Psychology.—Fundamental problems of philosophy; lectures and Hibben's The Problems of Philosophy.—Theism; text-book, Flint's Theism. **EIV3**

3. History of Philosophy.—Lectures and Weber's History of Philosophy. **EIV3**

4. Fine Art.—Lectures and text-books; Kedney's Hegel's Aesthetics; G. Baldwin Brown's The Fine Arts. **EIVB2**

PROFESSOR TORREY

HISTORY

1. General History.—Under this head Mediæval and Modern history will be covered in three courses. These will be given in successive years, providing thus a three-years course of consecutive historical study. Collateral reading, topical investigations, and theses will be required. **E3**

   a. Mediæval History, from the Fall of Rome to the French Revolution. Study of mediæval institutions, migrations, feudalism, Holy Roman Empire, papacy, crusades, towns, rise of European states, Renaissance and Reformation, colonial expansion.

   b. Modern European History from the French Revolution to the present. Study of the Revolution, its causes and effects, Napoleonic wars, readjustment of Europe, Germany, Russia, industrial revolution, political, and social condition of Europe.

c. American History, North and South America. Colonial period, constitutions and society. Conflict between France and England, Revolution, federal union, parties, slavery, civil war, reconstruction, social condition. The emphasis upon social development.

Course c will be given in 1900-1901.

2. French Revolution.—Seminar course. Detailed study of the causes, principles and consequences of the revolutionary movement in Europe. Investigation will be the method, with presentation of results before the class; supplementary lectures. A working knowledge of French will be indispensable. **EIII&IV3**

3. Parliamentary Goverment.—Seminar course in the detailed study of the origin and development of the parliamentary system of government from Magna Charta to the cabinet. Methods same as in Course 2. **EIII&IV3**

PROFESSOR EMERSON

SOCIOLOGY

1. Social Theories.—Examination of various social schemes; Plato's Republic, Cicero's De Republica, Augustine's Civitas Dei, More's Utopia. Modern theories; Comte, Spencer, Kidd, Gumplowicz, Fouillée, Giddings, collectivism, communism, socialism.

2. Industrial Era.—A study of modern society under the phase of industrialism. Industrial revolutions, inventions, factory, transportation, trade, the modern city. Reaction upon state, culture, religion; consequent reconstruction of society.

3. Social Institutions.—An historical investigation of their origin and development; primitive and ancient society, family, slavery, property, marriage, civil government, law, rights, classes, religion, philosophy, agriculture, industry, commerce. Lectures, with extensive collateral reading, research and theses. **EIII&IV**

The above Courses will be given in successive years; Course 2 in 1900-1901.

PROFESSOR EMERSON

POLITICAL SCIENCE

1. Political Economy.—Text-book, Hadley's Economics. Lectures and discussions. **EIII3**

2. Constitutional History; Cooley's U. S. Constitution.—Comparative constitutional law; lectures and collateral readings. —International law; Lawrence's Principles of International Law the basis of instruction.—Political Economy applied to open questions by lectures and discussions. **EIV2**

PRESIDENT BUCKHAM

MATHEMATICS

1. a. Solid and Spherical Geometry.

   b. Algebra.—Arithmetical and Geometrical Progression, Convergence and Summation of Series, Binomial and Exponential Theorems, Logarithms, and a brief introduction to the Theory of Equations.

   c. Plane Trigonometry. **R15**

2. Review of Analytical Trigonometry, followed by Analytic Geometry, and a short course in Differential and Integral Calculus; lectures. **EII4**

3. a. Differential Calculus.
   b. Integral Calculus and Differential Equations ; lectures. **E3**

4. a. Methods used in the solution of Problems of Construction in Elementary Geometry.
   b. Introduction to modern Projective Geometry ; lectures. **E3**

5. Functions of a Complex Variable, and Elliptic Functions ; elementary. Text-book, Durège, with supplementary lectures, chiefly on Conform Representation. **E3**

6. Astronomy. **A.** Descriptive ; text-book, Young's Elements. **B.** Mathematical ; lectures. **EII&IIII**

Courses 4 and 5 will not be given in 1899–1900.

PROFESSOR DANIELS
DR BULLARD

1E.* a. Algebra.—Arithmetical and Geometrical Progression, Permutations and Combinations, Probability, Binomial and Exponential Theorems, Logarithms, Convergence and Summation of Series, and introduction to Theory of Equations. **15**

   b. Plane and Analytical Trigonometry. **15**

   c. Analytical Geometry.—Plane Analytical Geometry, Equations of the Second Degree, Solid Analytical Geometry. **15**

2E.* a. Differential Calculus. **II4**
   b. Integral Calculus and Differential Equations. **II4**
   c. Spherical Trigonometry and applications to Practical Astronomy. **II1**

MR BUTTERFIELD

*For Students in the Engineering Department.

PHYSICS

1. General Physics—Mechanics, properties of matter, heat, sound, light, electricity and magnetism. Text-book, Ames' Theory of Physics. Lectures and laboratory work. **4**

Required of Chemical and Engineering Sophomores. Those electing this course should be familiar with the elements of Trigonometry.

2. Electricity and Magnetism.—Nipher's Electricity and Magnetism and Carhart and Patterson's Electrical Measurements used as text-books. Lectures and laboratory work. **4**

3. Heat.—Maxwell's Heat and Duhem's Potential Thermodynamique used as basis of lectures. Lectures and laboratory work. **3**

4. Light.—Preston's Theory of Light and Basset's Physical Optics used as basis of lectures. Lectures and laboratory work. **2**

5. Mathematical Physics.—Methods of solving the differential equations of physics with application to problems in mechanics, sound, heat and electricity. Text-books used as basis of lectures: Rieman's Partielle Differentialgleichungen, Walton's Collection of Problems in Mechanics, Donkin's Acoustics, and Fourier's Analytical Theory of Heat. Lectures. **4**

PROFESSOR SLOCUM

NATURAL SCIENCES

1. Physiology and Hygiene.—A course of informal, practical lectures upon the principles of Hygiene and Sanitary Science, including so much of Anatomy and Physiology as is necessary to a proper understanding of these principles. **RI1**

2. Physiology, Advanced Course.—Recitations from Martin's Human Body, supplemented by lectures, demonstrations, and a full series of Auzoux and Deyrolle Models. **EIII&IV2**

3. Animal Biology, General Course.—The aim of this course is to train the student in methods of observation and reasoning as well as in the acquisition of facts. The course consists of two lectures and two laboratory sessions each week during the second half-year. In both lecture-room and laboratory a sufficient number of typical forms are studied to give the student a general survey of the animal kingdom. **EIII&IVB4***

4. Animal Biology, Advanced Course.—This is designed for those students only, who during the previous course have developed so much interest in the subject and so much success in investigation as to make it advisable for them to continue the study in special lines. A few forms only are thoroughly investigated. A limited portion of the time may be given to systematic work upon some group of animals. In both these courses full and accurate notes of the work done, illustrated by careful sketches, are required. **EIV3-6**

The Biological Laboratories are well equipped with compound and dissecting microscopes, so that usually each student is supplied with both, which he is free to use during his course. Microtomes and other needed laboratory apparatus are also furnished.

5. Entomology.—Lectures and laboratory course in structural and systematic entomology, with special reference to insects which are injurious to vegetation. **B2**

6. Anthropology.—Lectures and collateral reading. A general survey of the ethnogical, social, moral and intellectual characteristics of the principal races of the world is fol-

*The "hour" in laboratory work is an hour and fifty minutes.

lowed by a discussion of the origin and development of laws, government, arts, industries, language, literature and religious systems. So far as practicable the lectures are illustrated by maps, plates, photographs and specimens. **EIII&IVA3**

7. Geology.—The course in Geology is intended primarily to meet the wants of those who, though not expecting to specialize in the subject, yet desire such knowledge of its facts and principles as every educated person should possess. About one-half of the course consists of recitations, Scott's Introduction to Geology being used as a text-book. The remainder of the time is devoted to lectures upon Historical Geology. These are illustrated by an extensive series of fossils typical of each of the great geological subdivisions. So far as practicable, excursions are taken to interesting localities in the vicinity of the College. **EIII&IVB3**

PROFESSOR PERKINS

8. Mineralogy.—Lectures and laboratory work. The course comprises Crystallography, Blow-pipe Analysis, and Determinative Mineralogy, and aims to give the student such experience as will enable him to distinguish, with the aid of tables, any mineral species. **A3**

Required of Chemical and Civil Engineering students; open to Classical and Literary-Scientific students who have taken Chemistry 1.

MR JACOBS

BOTANY

1. Elements of Biology of Plants.—Elements of plant structure and physiology followed by a comparative study of some of the lower forms of plant life. Two lectures or recitations with collateral reading and two laboratory exercises each week. **II&IIIA4**

2. Structural and Systematic Botany.—This course is a continuation of 1, including the study of the ferns and higher plants, with special reference to their structure and relationship and the identification of species. Field work upon special groups of plants will be undertaken in the spring. Lectures, recitations and laboratory work. **II&IIIB3 or 4**

3. Plant Physiology.—Experimental work in the laboratory; lectures and collateral reading. **III&IVA3**

4. Plant Pathology.—A study of the nature and causes of plant diseases, including an introduction to the methods of bacteriology and a systematic consideration of parasitic fungi. Lectures, collateral reading, laboratory and field work. **III&IVB3**

4. a. Bacteriology.—Any student taking course 4 may elect two hours additional work in bacteriology, such extra time to be given to the study of technical methods of bacteriological investigation. If the laboratory is not crowded, a few advanced students other than those taking course 4 may be permitted to elect course 4a as a three-hour course.

Courses 4 and 4a will probably not be given in 1900–1901.

5. Seminar.—A weekly meeting of advanced students with the instructors for the discussion of current literature and investigations. **1**

6. Investigation.—Any student who is prepared may undertake research work upon a special topic in preparation for a graduation thesis or as a candidate for honors in botany. In exceptional cases similar work may be undertaken for credit toward a degree. The nature and extent of such work is arranged individually.

PROFESSOR JONES, MR HOWE

Horticulture

1. Propagation, nursery management, pruning, horticultural classification. **RIIB3**
2. Pomology, large and small fruits, with field and laboratory work and excursions to points of horticultural interest. **RIIIA3**
3. Landscape Gardening.—The philosophy of art as applied to landscape study, with a consideration of the history of landscape art and a study of modern works. Lectures, illustrations, readings and field work. **EA2**
4. Forestry.—The botany of native forest trees, with a study of forest management. **EB2**
5. Special Electives are offered to individual students in various lines of horticulture, such as Evolution, Landscape Gardening, Pomology, and the study of leading horticultural works in French and German.

For Course in Evolution see Agriculture 5.

Professor Waugh

ENGINEERING

Drawing

1. a. Mechanical drawing and lettering. Tracy's Elements of Mechanical Drawing ; Reinhardt's Free Hand Lettering. **IA&B2***

   b. Detail working drawings of machines, and construction of gear teeth. **IIA1,B2**

   c. Analysis of valve gears, and steam engine details. **IIIA3,B2**

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*In drawing and laboratory work, the "hour" is one hour and 50 minutes.

2. a. Elementary projections and descriptive geometry. **IB2**
   b. Descriptive geometry and isometric projections. **IIA3**
   c. Stereotomy. **IIB2**
3. a. Topographical drawing, pen and colored topography. **IB1**
   b. Map construction. **IIB2**
   c. Mapping surveys. **IIIA4**
4. a. Structural drawing. **IVA4**
   b. Problems in designs. **IVB3**

PROFESSORS BARBOUR, VOTEY, AYER, MR SMITH

MECHANICS

1. a. Force and Energy.—Representation and measurement of forces, their composition and resolution, equilibrium, velocity and acceleration, mechanical work, centrifugal force, energy of rotating bodies, moment of inertia, impact, centre of gravity. Lanza's Mechanics. **IIIA4**
   b. Elasticity and Resistance of materials, theory of flexure and torsion, shear and bending moment, elastic limit and working stresses. **IIIA4**
   c. Determination of Stresses in roof and bridge trusses, analytical and graphical methods. **III4**
2. Stresses in Trusses from wheel loads, graphical statics, study of arches and retaining walls, designing of plate girders and trusses. Johnson's Framed Structures. **IV5**

PROFESSOR BARBOUR

3. a. Hydraulics.—Pressure of water on plane and curved surfaces, centre of pressure, theoretical and actual discharge through orifices and weirs. Flow of water in long pipes, reaction and impact of water, laboratory and field measurement. Merriman's Hydraulics. **IVA4**
   b. Laboratory and Field Work. **IVB1**

MR BUTTERFIELD

Civil Engineering

1. a. Surveying.—Use of Instruments, compass, level and transit; land surveying; recitations and field work. Raymond's Surveying. **IB2**

   b. Summer school of Surveying.—Land surveying, traversing, leveling and topographical surveying. One month in summer vacation.

2. a. Computing and plotting work of Summer School. **IIA1**

   b. City Surveying.—Solar compass and transit; recitations, lectures and field work. **IIB2**

   c. Summer School of Surveying.—Geodetic, hydrographic and topographical surveying. One month in summer vacation.

3. a. Geodetic Surveying. **IIIA2**

   b. Railroad Surveying.—Recitations and field work. Searles' Field Engineering. **IIIB3**

Professor Votey, Mr Smith

Engineering Construction

1. Materials of construction, their properties, preparation and use.

   a. Stone, brick, lime, cement, mortar, concrete and masonry. Recitations, lectures and laboratory work. **IIIA2**

   b. Timber, iron, steel and other metals. Recitations, lectures and laboratory work. Johnson's Materials of Construction. **IIIB2**

2. a. Construction of roads, streets and pavements. Lectures, recitations, field and laboratory work. Byrne's Highway Construction. **IIIB2**

   b. Foundations of structures on land and in water. Lectures. **IVA2**

c. River improvements; harbor and canal construction; railway construction, equipment and management. Lectures. **IVB1**

3. a. Contracts and specifications. Lectures and recitations. Johnson's Contracts and Specifications. **IVB1**

PROFESSOR VOTEY, MR SMITH

SANITARY ENGINEERING

Water supply, sewerage, plumbing, heating and ventilation. Lectures and laboratory work. **IVA3**

PROFESSOR VOTEY

MECHANICAL ENGINEERING

1. a. Elementary Mechanism.—The Transmission of Motion by rolling and sliding contact, by linkages, and by wrapping connectors; trains of mechanism; aggregate combinations of mechanism. Stahl and Wood's Elementary Mechanism. **IIA2**

b. Gearing and Machine Tools.—Theory and construction of correct gear tooth curves. Construction of the driving and feed mechanisms of standard machine tools. Stahl and Woods' Elementary Mechanism; lecture notes. **IIB3**

2. a. Steam Engineering.—Analysis of plain slide valve motions by the aid of the Zeuner and Bilgram diagrams; link motions and radial reversing gears; double and detachment valve gears. Construction and use of the steam engine indicator. First and second laws of thermodynamics; laws of perfect gases and saturated vapors; elementary theory of the heat engine. Peabody's Valve Gears for Steam Engines; Ewing's The Steam Engine; lecture notes. **IIIA4**

b. Steam Engineering.—Theory and practice of the steam engine. Construction and care of steam boilers. Pumps and pumping engines. Theory and construction of the injector. Ewing's The Steam Engine; Peabody and Miller's Steam Boilers; lecture notes. **IIIB4**

3. a. Dynamics of Machines.—Analysis and design of steam engine governors and fly wheels. Theory and design of multiple-expansion steam engines; lecture notes. **IVA4**

b. Motors and the Transmission of Power.—Gas, oil and hot-air engines; hydraulic motors; rope driving; measurement of power; use of compressed air; mechanical refrigeration. Clark's The Gas and Oil Engine; Flather's Rope Driving; Flather's Dynamometers; Richards' Compressed Air; lecture notes. **IVB4**

c. Machine Design.—Application of mechanics to the design of steam boilers and power transmission machinery; steam engine design. Lecture notes; Kent's Mechanical Engineers' Pocket Book. **IVA&B3**

4.* Machinery and Motors.—Elementary study of steam engines, boilers, pumps and power transmission machinery. Lectures. **IVA2**

5. a. Mechanical Engineering Laboratory.—Determination of the errors of thermometers, steam gauges, planimeters and indicator springs; steam engine tests; tests of steam calorimeters. **IIIB2**

b. Mechanical Engineering Laboratory.—Tests of steam boilers and pumps, and the measurement of power. **IVB2**

PROFESSOR AYER

*Required of Seniors in the departments of Chemistry and Civil Engineering.

SHOP-WORK

1. Carpentry. **B2**
2. a. Wood turning and pattern making. **A2**
   b. Pattern making, moulding and founding. **B2**
3. a. Forging of iron and steel. **A3**
   b. Chipping, filing and lathe work. **B3**
4. Machine shop work. **A&B3**

MR EATON

ELECTRICAL ENGINEERING

1. a. Electrical Units and Fundamental Laws. December to mid-year. **2**
   b. Electro-magnetism and electro-magnetic Induction. Houston & Kennelley's Electrical Engineering Leaflets. **B2**
2. a. Dynamo-electric Machinery.—Theory of the Dynamo. **A4**
   b. Designing of Dynamos and Motors. Jackson's Electro-magnetism and Construction of Dynamos; Hawkins & Wallace, The Dynamo. **B4**
3. a. Alternating Currents.—A study of the laws governing alternating electro-motive forces when applied to circuits containing resistance, inductance or capacity; equations of energy; characteristics of alternators. **A3**
   b. Multiphase Currents.—A study of two-phase and three-phase generators and motors; rotary converters; transformer designing. Jackson's Alternating Currents; Steinmetz's A. C. Phenomena; Fleming's The Transformer. **B2**
4. a. Electric Railways and Power Transmission.—Power stations, including discussion of sources of power, types of engines and water wheels, best arrangement and number of units, etc.; series-multiple controllers; calculations of feeder systems designed to secure minimum cost and maximum efficiency. **A2**

b. Electric Lighting.—Central Station designing ; use of storage batteries, rotary converters and multiphase currents ; calculations to determine most suitable distributing system, having maps and other data provided. Electrometallurgy ; telephone and telegraph system ; specifications. Crosby & Bell's Electric Railways ; Bell's Electric Transmission of Power ; Crocker's Electric Lighting; Merrill's Specifications; other reference books. **B2**

5. Electric Laboratory.

   a. Direct current dynamos and motors. **A&B3**

   b. Alternating current machinery and transformers. **A&B2**

6. Graduating Thesis.—A paper based on original research, with the approval and under the supervision of the instructor in charge. **B2**

7. Electric Motors.—A practical course on electrical machinery, for students not pursuing the electrical engineering course. The preparatory courses required are mathematics 1c and physics 1. **A2**

PROFESSOR FREEDMAN

CHEMISTRY

1. General Chemistry.

   a. Lectures. **A&B2**

   b. Laboratory work.—Elementary experiments and elementary qualitative analysis. **A&B2**

2. Qualitative Analysis.—Advanced course ; laboratory work, with lectures and recitations. **A3** Elementary quantitative analysis. **B3**

3. Quantitative Analysis.—Laboratory work and lectures, with class meetings for discussion of methods. One year or longer. **4**

4. Stoichiometry.—Lectures. **A2**

5. Industrial Chemistry.

   a. Assaying.—Ores, furnace products, etc. **A3**

   b. Lectures.—Inspection of constructional plans of work, with occasional excursions to manufacturing establishments, when such may be made conveniently. **B2**

6. History of Chemistry.—Lectures. **B1**

7. Organic Chemistry.

   a. Lectures.—Theory and synthesis of carbon compounds. **A&B2**

   b. Laboratory work.—Preparation of compounds, analyses, etc. **9**

   c. Commercial organic analysis.—Lectures. **B2**

Courses 5b and 7a are given in alternate years.

8. Physiological Chemistry. **A2**

9. Physical Chemistry. **B2**

Practical use of the Spectroscope is offered to students who are qualified for that order of work, at some convenient time during the four years.

PROFESSOR MERRILL, MR WHITNEY, DR TORREY, MR JACOBS

AGRICULTURE

1. Soils, Tillage, Drainage, Irrigation, Fertilizers. King's The Soil; King's Drainage and Irrigation; Voorhees' Fertilizers. Lectures, recitations, collateral reading and theses. **RIIA5**

2. Agricultural Grasses; a study of their botanical relationships and economic values. **RIIB1**

3. a. Stock Feeding; animal nutrition, fodders and feeds, feeding standards and rations; Henry's Feeds and Feeding. Lectures, recitations, collateral reading and theses. **RIIIA** till Jan. **4**

   b. Dairying. Wing's Milk and its Products; Farrington and Wall's Testing Milk and its Products. Lectures, laboratory work and recitations. **12**

January session of the Dairy School.

4. Stock Breeding; breeds of live stock. Miles' Stock Breeding. Lectures, recitations and laboratory work (scoring cattle.) **RIIIB4**

5. Philosophy of Evolution; its practical demonstration and application in breeding and selecting farm and garden crops. Lectures. **RIII** Elective to others having sufficient preparation.

6. Original investigation for theses; laboratory and library research upon some subject pertaining to agriculture, botany, horticulture or veterinary science, under the direction of the instructor in charge. **IVA&B3**

PROFESSORS HILLS, JONES, WAUGH, DR RICH

VETERINARY SCIENCE

1. Comparative Anatomy of domestic animals. Strangeway's Anatomy. Lectures and recitations. **IIA2**

2. Comparative Physiology of domestic animals. Kirk's Human Physiology. Lectures and recitations. **IIB3**

3. Histology. Kirk's Human Physiology. Lectures and recitations. **IIIA2**

4. Diseases of domestic animals; theory and practice of veterinary medicine. Lectures, recitations and clinics. **IIIB3**

DR RICH

DEPARTMENT OF ARTS

FACULTY

MATTHEW H. BUCKHAM, D. D., President *Political Science*
HENRY A. P. TORREY, LL. D., Dean *Intellectual and Moral Philosophy*
GEORGE H. PERKINS, Ph. D. *Physiology, Geology, Anthropology*
JOHN E. GOODRICH, D. D. *Latin*
SAMUEL F. EMERSON, Ph. D. *History*
NATHAN F. MERRILL, Ph. D. *Chemistry*
ARCHIBALD L. DANIELS, Sc. D. *Mathematics*
LEWIS J. HUFF, A. M. *German*
LEWIS R. JONES, Ph. B. *Botany*
WILLIAM C. KITCHIN, Ph. D. *French and Italian*
FREDERICK TUPPER, JR. Ph. D. *English Literature*
ALLISON WING SLOCUM, A. M. *Physics*
GEORGE E. HOWES, Ph. D. *Greek*
CARROLL W. DOTEN, A. M. *Elocution*
WARREN G. BULLARD, Ph. D. *Mathematics*
ARTHUR L. ENO, A. M. *Rhetoric*

REQUIRED AND ELECTIVE STUDIES

I. Candidates for the degree of A. B., after pursuing a required course of Greek, Latin, Mathematics, English and Hygiene through the Freshman year, are allowed to elect a certain number of their studies, the number increasing in the later years of the College course until the Senior year, when all studies, except those of the Military department, are elective. Each student is required to take such a number of Electives as will bring his total work up to fifteen recitation or lecture hours per week, not including those of Military Drill.

The abuse to which a system of perfectly free electives is liable is avoided by the requirement of a certain number of studies which are intended to secure some completeness and symmetry of discipline, while the number of electives permitted gives room for the development of special talents and the following out of individual predilections. The electives are offered in such a way as to permit extended study of any subject or group of subjects of which the student may wish to make a specialty. For example, Greek, Latin, English and Mathematics may be pursued through most of the time during the four years; French and German each for three years; the Natural Sciences, History, and the Social, Intellectual and Moral Sciences, for from two to three years.

The electives embrace studies in Greek and Latin, French and German, including studies in Comparative Literature; the higher Mathematics, including Calculus and the New Geometry; History; Political and Social Science; English Literature; Chemistry, theoretical and applied, with laboratory work; Physics; Geology; Botany; Zoology; Biology; Anthropology; Metaphysics; the History of Philosophy; the Theory of Fine Art.

Other subjects, in which classes are likely to be small, like Anglo-Saxon and Italian, will be offered occasionally, at such intervals as to give all students an opportunity to take them at some time during their college course.

II. Candidates for the degree of Ph. B. will have the same required courses and the same electives as candidates for the degree of A. B., except that, omitting Greek, they will begin the study of French and German one year earlier and will select in the second year from the more advanced electives.

III. Persons who may desire to take a short academic course preparatory to the study of medicine may take the first two years of the course leading to the degree of Ph. B., with any of the electives of the entire department for which they have the requisite preparation.

IV. Students in any of the other departments may, by special permission of the Faculty, take a limited number of electives from the departments of Engineering and Chemistry.

V. It is assumed that the choice of electives will be made by the students with reference to some clear, deliberate purpose, and as the result of consultation with members of the Faculty. In all cases the natural sequence of studies must be observed. The Faculty reserve the right to exclude a student from any course for which his previous studies have not properly prepared him.

VI. Arrangements are made between the Academic and Medical departments by which a candidate for the degree of A. B. or Ph. B. may count certain Medical studies of the first year as equivalents for part of his last year's Academical studies, and in this way may abridge by one year the time necessary for taking his degrees in both departments.

The Choice of Electives

The studies of Freshman year are all prescribed. For Classical students they are : *Greek, Latin, Mathematics, English and Hygiene ; for* Literary-Scientific students Greek is replaced by *French.*

With Sophomore year the system of Elective studies begins. It is designed to start students upon those different paths which lead to specialization in different branches. It is important therefore that studies should be chosen with a view to a definite goal. The Prescribed studies of Sophomore year are *English and one Modern Language.* The Elective studies of Sophomore year are *Greek, Latin, Elementary German, Elementary or Intermediate French, History, Mathematics, Chemistry, Physics, Biology, Botany.* If Classical studies are the goal, Greek and Latin should be chosen, and German would be a valuable accessory. If it is the aim to emphasize the Literary studies, German and French should be elected. Mathematics is the best preparation for physics, and Chemistry for the biological sciences.

Every student should endeavor to secure a working knowledge of at least one modern language, and *no language should be pursued for less than two years.*

The studies of Junior year should continue the lines elected in Sophomore year, and the studies of Senior year should complete the same, but opportunity should be secured for the enrichment presented in the Philosophical, Political, Social and Historical studies. In this way a relatively high degree of specialization may be combined with the advantages of liberal studies. No student, however, will be allowed to enter a course when in the opinion of the instructor his previous studies have not properly prepared him for it.

The requirement of Military Instruction has recently been extended so as to include Seniors.

DEPARTMENT OF ENGINEERING

FACULTY

MATTHEW H. BUCKHAM, D. D., President *Political Science*
VOLNEY G. BARBOUR, Ph. B., C. E., Dean of Faculty
Bridge Construction and Mechanics
JOSIAH W. VOTEY, C. E. *Civil Engineering*
ARTHUR W. AYER, B. S. *Mechanical Engineering*
WM. H. FREEDMAN, C. E., E. E. *Electrical Engineering*
GEORGE H. PERKINS, Ph. D. *Natural History*
NATHAN F. MERRILL, Ph. D. *Chemistry*
LEWIS J. HUFF, A. M. *German*
WILLIAM C. KITCHIN, Ph. D. *French*
FREDERICK TUPPER, JR., Ph. D. *English Language and Literature*
ALLISON W. SLOCUM, A. M. *Physics*
JAMES EATON *Shop Work*
CARROLL W. DOTEN, A. M. *Elocution*
GEORGE E. P. SMITH, C. E. *Civil Engineering*
ARTHUR D. BUTTERFIELD, M. S. *Mathematics*

Candidates for admission to this Department must be prepared in the ordinary English branches, including arithmetic, algebra through quadratics, plane, solid and spherical geometry, English grammar and literature as prescribed for the course in Arts, page 17, English and American history, botany, and political and physical geography.

Candidates must also be prepared with two years of French, or two years of German, or an equivalent of Latin.

There are three courses of study in the Department; one in Civil Engineering, one in Mechanical Engineering, and one in Electrical Engineering, each covering four years. In laying out these courses the University has kept in mind two principles; first, that a technical course pursued in a University ought to be broadly educational; second, that it ought to be in the best sense professional. It aims to give not so much a technical apprenticeship as a professional education. All courses include the study of mathematics, chemistry, physics, theoretical and applied mechanics, English, French, German, political economy.* Technical Essays are required from students at intervals during their course, and a Graduating Thesis must be submitted by each near the close of the Senior year.

The Department is well supplied with Engineering and Scientific periodicals, including the publications of the chief engineering societies of this country and of the English Institute of Engineers; and the Library contains a very complete list of the valuable works in the several branches of Engineering.

Graduates of the Academic course may complete the special studies of the Department in three years, or in two years where sufficient preparation has been made in mathematics, chemistry and physics.

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*For more detailed statement of studies, see Courses of Instruction, pages 22ff, and the Bulletin of the Department, which may be obtained by application to the Registrar of the University.

CIVIL ENGINEERING

The special studies in Civil Engineering are arranged with the object of furnishing a broad training in the technical branches, and of giving the student a thorough and practical knowledge of the essential principles of the various branches of the profession, so that on graduation he may be well equipped to enter successfully any one of the special fields of engineering.

Drawing. The special instruction in the various kinds of Drawing is confined to the first two years, but some work in the drawing-rooms is required throughout the course, the time during the later years being devoted to Mapping Surveys and to Structural Drawing and Designing.

Surveying and Summer School of Surveying. The student is taught the theory, use and adjustments of all the instruments used in surveying, the methods of conducting surveys and of computing and plotting the results of the work. The Field Work in surveying is carried on mainly at the Summer School of Surveying, which is held during the four weeks following the close of the regular college year. Attendance at this school is required of all students in Civil Engineering for the first two years of their course, and the work may be elected by students of any other class or department. A fee of five dollars for incidental expenses is charged for this course. Any young man outside of the University who may desire a course in practical surveying, if properly fitted for the work, may be admitted to the School upon application.

Railroad Engineering. In the second half of Junior year the class-room work in Railroad Surveying is commenced, and this is followed by field practice in running curves and cross-section work. A location is made of a short line of road, and the work preliminary to construction is carried out, estimates being made of the quantities of material involved and the cost of construction. In Senior year a course of lectures is given on Railway Construction, Equipment and Operation.

Engineering Construction. During Junior year four hours a week are devoted to the study of the materials of construction, and especially of the characteristics and properties that govern the selection, manufacture and use of such materials in engineering work. Laboratory tests of the physical properties of the materials form an important part of this course, and are carried on in connection with the class-room work.

In Senior year attention is given to the subjects of Foundations and Masonry work, the Improvement of Rivers and Harbors, and Canal Construction. The study of Specifications and Contracts forms a part of this course.

Highway Engineering. The general principles relating to the location and building of country roads and city streets are first considered, followed by a detailed study of the materials and methods used in the construction of Macadam and Telford roads and the various forms of street pavements. The Engineering Laboratory has a complete equipment for testing road and paving materials.

Sanitary Engineering. This course includes a study of house plumbing, the sewerage of cities, the methods of sewage disposal, the collection, storage and distribution of water and the heating and ventilation of buildings.

Equipment. The collection of surveying instruments is sufficiently large and complete to enable the field work to be carried on to the best advantage.

The Testing Laboratory contains a cement machine of 2,000 pounds capacity, a Riehlé testing machine of 50,000 pounds, and an Olsen machine of 200,000 pounds. These machines are equipped with the special appliances needed, including micrometers and extensometers, for properly conducting experimental work.

SYNOPSIS OF COURSES

FRESHMAN YEAR	A	B
Mathematics 1*a, b, c	5	5
Drawing 1a, 2a	2	2
Drawing 3a		1
Surveying 1a		2
Chemistry 1a, b	4	2
Natural Sciences 1	1	1
English 1	2	2
German 1 or French 1	4	4
Vacation		
Surveying 1b, one month		

SOPHOMORE YEAR	A	B
Mathematics 2 *a, b	4	4
Mathematics 2*c	1	1
Drawing 2b, 3b	3	2
Surveying 2a, 2b	1	2
Physics 1	4	4
English 2	2	2
German 2, or French 2	3	3
Vacation		
Surveying 2c, one month		

JUNIOR YEAR	A	B
Mechanics 1a, b, c	4	4
Engineering Construction 1a, b	2	2
Drawing 3c, 4a	4	4
Geodesy	2	
Surveying 3b		3
Engineering Construction 2a		2
Political Science 1	3	3
Mineralogy	3	
Natural Sciences 7		3
Vacation		
Engineering Thesis		

SENIOR YEAR	A	B
Mechanics 3a, b	4	1
Mechanics 2		3
Graphical Statics	5	
Drawing 4b		3
Sanitary Engineering	3	
Engineering Construction 2b, 2c	2	2
Engineering Construction 3a		1
Mechanical Engineering 4	2	
Mathematics—Least Squares		2
Engineering Laboratory		2
Electrical Engineering	2	
Graduating Thesis		

For explanation of letters and figures in heavy type, see p. 22.

MECHANICAL ENGINEERING

The technical studies of the course in Mechanical Engineering are designed to give the student a knowledge of the fundamental principles of engineering practice, together with such a training, both theoretical and practical, as will best help him to become a successful designer of machinery, or to approach from the best standpoint problems relating to the generation, transmission, and use of power. The groundwork of this instruction is given by means of recitations and lectures in the class room, and these are supplemented by extended courses in the drawing room, the workshops, and the engineering laboratory.

Class Room Work of the course proper begins in the Sophomore year with a study of elementary mechanism, gear tooth construction, and the mechanism of machine tools. The Junior year is taken up almost wholly with the general subject of steam engineering, including the mechanism and thermodynamics of the steam engine, the construction and management of steam boilers and pumps, the use of the steam engine indicator, etc. In the Senior year the study of machine design is made an important feature, and instruction is given also on the subjects of governors and fly-wheels, the use of compressed air, mechanical refrigeration, measurement of power, gas and oil engines, and the multiple expansion steam engine.

Drawing. Instruction and practice in drawing are given during all four years of the course. The work includes projection drawing, free hand lettering, the making of working drawings, blue-printing, and designing.

Shopwork begins in the second half of the Freshman year with instruction in carpentry, followed in the Sophomore year by wood-turning, pattern making, and foundry work. Forging, chipping and filing, and machine tool work are taught during Junior and Senior years. The shops are well fitted up, and are supplied with equipment as follows :

The Carpenter and Pattern Shop contains, in addition to sixteen carpenter benches, and a full line of tools for manual work, thirteen wood-turning lathes, an eighteen-inch pattern-makers' lathe, a buzz planer, two circular saws and a scroll saw. The Foundry is supplied with a cupola furnace, brass furnace, core-oven and a complete outfit for bench and floor moulding. The Forge Shop contains eight forges and anvils, a hand drill, a punching and shearing machine and all the hand tools necessary for instruction in this branch. The Machine Shop is equipped with filing and chipping benches, six engine lathes, two hand lathes, a planer, a shaping machine, two upright drills, a milling machine, a grinding machine and a wet emery grinder, together with a large assortment of machinists' hand tools and fixtures.

Engineering Laboratory. The work in the laboratory begins in the second half of the Junior year with tests upon steam engines, pumps, injectors, etc., and is followed during the Senior year by boiler trials, the use of dynamometers, hydraulic experiments, and the testing of materials of construction. A twenty-five horse power Harris-Corliss engine, which also supplies power for the shops, two smaller vertical engines, and a fifty horse power tubular boiler are available for engine and boiler tests. The laboratory contains also a surface condenser and air pump, a large duplex steam pump, a pulsometer, two friction brakes, two transmission dynamometers, indicators and planimeters, several steam calorimeters, a steam injector arranged for testing, a steam gage tester, and numerous minor pieces of apparatus used in connection with these. For work in hydraulics there is provided an orifice tank, arranged for both high and low heads, one large and two small weighing tanks with scales, a twelve-inch weir, a three-foot weir, a Venturi meter, and a hydraulic ram. This equipment will be still further increased during the next two years.

SYNOPSIS OF COURSES

FRESHMAN YEAR	A	B	SOPHOMORE YEAR	A	B
Mathematics 1*a, b & c	5	5	Mathematics 2*a & b	4	4
Drawing 1a	2	2	Mechanical Engineering 1a & b	2	3
Shopwork 1		2	Drawing 1b	1	2
Chemistry 1a & b	4	4	Shopwork 2a & b	2	2
Natural Science 1	1	1	Physics 1	4	4
English 1	2	2	English 2	2	2
French 1, or German 1	4	4	French 2, or German 2	3	3

JUNIOR YEAR	A	B	SENIOR YEAR	A	B
Mechanics 1a, b & c	4	4	Mechanics 3a & b	4	1
Mechanical Engineering 2a & b	4	4	Eng. Construction 1a & b	2	2
Mechanical Engineering 5a		2	Mechanical Engineering 3a & b	4	4
Drawing 1c	3	2	Mechanical Engineering 3c	3	3
Shopwork 3a & b	3	3	Mechanical Engineering 5b		2
Political Science 1	3	3	Electric Motors	2	
			Shopwork 4	3	3

See pages 22–44.

ELECTRICAL ENGINEERING

The special studies in Electrical Engineering begin with a two-hour course in Sophomore year devoted to a study of electrical units, the laws governing electric and magnetic circuits, and the elementary theory of the dynamo. The four-hour course in Junior year is devoted chiefly to a detailed study of dynamo-electric machinery, and includes the designing of direct current dynamos and motors. Accompanying this is a laboratory course covering tests of direct-current dynamos and motors for determining their efficiencies under various conditions of load and speed. In this work each student learns how to make the necessary connections and operate the machines, and also how to use many electrical measuring instruments.

In Senior year, most of which is devoted to strictly engineering subjects, one course treats of the mathematical theory of alternating currents and the designing of alternators, transformers and multiphase motors, and is supplemented by a laboratory course following the same line of work. Another course is arranged to deal successively with most of the important lines of electrical engineering work, such as electric railways, electric lighting and transmission of power, storage batteries, telephone systems, etc., and includes the careful working out in detail of designs of power stations, complete lighting and railway systems, etc., with due consideration for items of first cost, maintenance, operating expenses, safety to persons and property, and such other matters as have constantly to be dealt with in practical engineering work. This course is also accompanied by suitable laboratory work; *e. g.* a series of tests with two street-car motors, a controller and two friction brakes, the conditions being so arranged as to represent closely those met with in electric street-railway work. Careful notes are taken of all laboratory work done, and permanent records are systematically worked out and tabulated.

The Electrical Engineering Laboratories are situated in the Williams Science Hall, and through the generosity of Dr. Williams have been well equipped with many standard electrical instruments

and machines. The two laboratories in the East wing contain the following dynamos and motors: a direct current 25 kilo-watt 110 volt dynamo; a 5 H. P. 110 volt motor; a 5 kilo-watt machine, designed specially for experimental purposes and provided with duplicate parts; a Thompson-Houston arc-light dynamo; and a Westinghouse 10 H. P. machine of special design, which can be used as a direct-current dynamo or motor, as a self-exciting alternator or two-phase generator, or as a two-phase motor and rotary converter. All these machines can be driven by belts from a line shaft which is itself driven by a Westinghouse 25 H. P. three-phase motor. The latter is operated by current from the wires of a local company and can therefore be started instantly whenever needed. A large number of portable and accurate instruments of the most modern varieties are available for making tests, and the laboratories contain such other accessory apparatus as are necessary for rapid and complete tests. In the "railway" laboratory are two 50 H. P. Thompson-Houston 500 volt street-car motors, a K-2 series-multiple controller, and two friction dynamometers capable of absorbing the entire output of the motors. These are mounted and connected so that their efficiencies and power may be accurately determined under many conditions of loading.

Two rooms are devoted to photometric work. These will contain, including the instruments to be added this year, a Reichsanstalt photometer with numerous accessions and light standards, a mercury pump, a storage battery, etc. A room in the basement is being fitted up as an electro-metallurgy laboratory, and will soon be furnished with a low-voltage dynamo, a slate switchboard, vats, etc. For original experiments in connection with graduating thesis, many instruments of high precision are placed at the disposal of Senior students, and a workshop containing a lathe, bandsaw and other tools operated by a Stanley electric motor, affords opportunity for the construction of special apparatus.

SYNOPSIS OF COURSES

FRESHMAN YEAR	A	B	SOPHOMORE YEAR	A	B
Mathematics 1* a, b & c	5	5	Mathematics 2* a & b	4	4
Drawing 1 a	2	2	Mech. Engineering 1a & b	2	3
Shopwork 1		2	Drawing 1b	1	2
Chemistry 1a & b	4	4	Shopwork 2a, Elec. Eng. 1a&b	2	2
Natural Sciences 1	1	1	Physics 1	4	4
English 1	2	2	English 2	2	2
French 1 or German 1	4	4	French 2 or German 2	3	2

JUNIOR YEAR	A	B	SENIOR YEAR	A	B
Mechanics 1a, b & c	4	4	Mechanics 3a & b	4	1
Mech. Engineering 2a & b	4	4	Engineering Construction 1a&b	2	2
Mech. Engineering 5a		2	Elect. Engineering 3a & b	3	2
Drawing 1 c	3		Elect. Engineering 4a & b	2	3
Elect. Engineering 2a & b	4	4	Elect. Engineering 6		2
Elect. Engineering Lab. 5a	3	3	Elect. Eng. Lab. 5b	3	3
			Shopwork 4	3	3

DEPARTMENT OF CHEMISTRY

FACULTY

MATTHEW H. BUCKHAM, D. D., President
NATHAN F. MERRILL, Ph. D. *Chemistry*
GEORGE H. PERKINS, Ph. D. *Natural History*
LEWIS J. HUFF, A. M. *German*
WILLIAM C. KITCHIN, Ph. D. *French*
ARCHIBALD L. DANIELS, Sc. D. *Mathematics*
FREDERICK TUPPER, JR., Ph. D. *English Language and Literature*
ALLISON W. SLOCUM, A. M. *Physics*
CHARLES F. WHITNEY, B. S. *Gen. Chem. and Qual. Anal.*
HENRY AUGUSTUS TORREY, Ph. D. *Physical and Physiol. Chem.*
ELBRIDGE C. JACOBS, B. S. *Mineralogy and Assaying*

In this Department, during the first year, every student attends about seventy lectures and recitations in General Chemistry, and as soon after the beginning of the year as it seems advisable, enters the laboratories, where he pursues graded and systematic work, beginning with a schedule of experiments designed to illustrate fundamental principles and cultivate familiarity with the common elements and their compounds. From the outset quantitative methods are followed as far as practicable.

Qualitative Analysis is next studied. The work includes the use of the spectroscope and the examination of commercial products. Lectures and recitations continue through the course.

After the completion of Qualitative Analysis, Quantitative Analysis is begun, the student proceeding through the simpler determinations to more difficult analyses. The course embraces gravimetric and volumetric methods with applications to analyses of commercial products. Occasionally the students meet together and present statements of work done in the laboratory with discussion of methods, etc. In this way each student may derive benefit from the work done in the laboratory by the entire class.

In the Senior year Organic Chemistry is taken up both in the class-room and in the laboratory. This course involves the preparation of organic compounds and their analysis. Students of ability will be encouraged to undertake original investigations under the special supervision of the head instructor.

Lectures are given upon Industrial processes and these lectures are occasionally supplemented with excursions to manufacturing establishments. In the third year facilities are offered, and instruction is given, in Crystallography, Mineralogy and Assaying of Ores by both fire assay and wet assay. A short course of lectures on the History of Chemistry is given.

During the Senior year instruction is given in those parts of mechanical engineering which have a direct bearing upon the chem-

ical industries. This work includes lectures upon prime movers; boilers and pumps, the elements of machines and the proportioning of shafting, pulleys and belts, together with some actual practice in the management of boilers and steam engines. In the Junior year, a course on electric motors given.

SYNOPSIS OF COURSES

FRESHMAN YEAR	A	B	SOPHOMORE YEAR	A	B
Chemistry, lectures	2	2	Laboratory	3	3
Laboratory	2	2	Physics	4	4
Mathematics 1	5	5	German 1	4	4
Drawing	2	2	English 2	2	2
English 1	2	2	French 2	3	3
French 1	4	4	E. History 1	3	3
			E. Analytics	3	3

JUNIOR YEAR	A	B	SENIOR YEAR	A	B
Laboratory	4	7	Laboratory	9	9
Assaying	3		Organic Chemistry, lectures	2	2
Mineralogy with Blowpipe Determinations	3		Machinery and Motors	2	
Stoichiometry	2		Industrial Chemistry		2
Electric Motors	2		History of Chemistry		1
Physiology	2	2	Geology		3
German 2	3	3	Theses		
Commercial Organic Analysis		2	E. Physiological Chemistry	2	
Physical Chemistry		2			
E. Calculus	3	3			

The lectures in Organic Chemistry and in Industrial Chemistry are usually given to Juniors and Seniors together in alternate years.

Certain studies of the Senior year in the Classical Department may be optional with a corresponding amount of laboratory work throughout this year.

All the courses in Chemistry are open as electives to such students in the Classical and Literary-Scientific Departments as are qualified to pursue them.

After Freshman year, students will be required occasionally to write essays upon subjects relating to their principal study, and

these will be criticised with respect to their correctness as English compositions.

It is desirable that applicants for admission to full standing in the Department of Chemistry as candidates for its degree should have had the regular classical course—the usual preparation for College—at some school whose certificates are recognized by this University. The requirements as to Mathematics, English, History (ancient history excepted), Geography, French and German, are the same as are found on pp. 17 and 18. Candidates for a degree in this department must have had in their preparatory courses two years of instruction in either Latin, French or German, or must pass examinations representing that amount of linguistic training. This requirement will be enforced at the beginning of the college year 1900–1901.

Students who can pass the examinations of the first year in French, may take the second-year courses in that study in their Freshman year. Those who begin French in Freshman year and German in Sophomore year must continue French through Sophomore year. Students who begin German in Sophomore year must continue German during Junior year. A two years' course in both French and German is required for students who have had neither of these languages.

For other requirements for admission to the Department, see the general statements respecting admission to the scientific departments on page 18.

Students showing proper qualifications may be admitted to a special course in Chemistry by permission of the President and of the Professors of the Department, but such students cannot receive the degree.

DEPARTMENT OF AGRICULTURE

FACULTY

MATTHEW H. BUCKHAM, D. D., President *Political Science*
JOSEPH L. HILLS, B. S., Dean *Agricultural Chemistry*
GEORGE H. PERKINS, Ph. D. *Natural History*
SAMUEL F. EMERSON, Ph. D. *History*
NATHAN F. MERRILL, Ph. D. *Chemistry*
ARCHIBALD L. DANIELS, Sc. D. *Mathematics*
LEWIS J. HUFF, A. M. *German*
JOSIAH W. VOTEY, C. E. *Surveying and Road Making*
LEWIS R. JONES, Ph. B. *Botany*
ARTHUR W. AYER, B. S. *Mechanical Engineering*
WILLIAM C. KITCHIN, Ph. D. *French*
FREDERICK TUPPER, JR., Ph. D. *Rhetoric and Elocution*
ALLISON W. SLOCUM, A. M. *Physics*
FRANK A. WAUGH, M. S. *Horticulture*
FRANK A. RICH, V. S., M. D. *Veterinary Medicine and Stock Breeding*
ELBRIDGE C. JACOBS, B. S. *Mineralogy*
HEMAN B. CHITTENDEN, A. M. *English*
JAMES EATON *Shop Work*
WARREN G. BULLARD, Ph. D. *Mathematics*
CLIFTON D. HOWE, A. B. *Botany*
GEORGE E. HUMPHREY *Dairying*
R. F. JAYNES *Dairying*
DUNCAN STUART, B. S. *Dairying*

The studies of the Agricultural Department are intended to impart both the theoretical and the practical knowledge necessary to success in farming, and at the same time to include enough of mathematics, literature, science and philosophy for a broadly scientific education.

Agriculture occupies a leading place in the course for three years. The course in Chemistry given during the Freshman year enables the student to gain a more thorough understanding of soils and fertilizers; while the instruction in Botany, begun in the first half of Sophomore year, prepares the way for the intelligent consideration of the values, uses and cultivation of grasses, forage plants and crops of all kinds.

Stock Feeding and Breeding are taught by lectures, text-book and practical application. The students are instructed in the principles of animal nutrition, the adaptability of various fodders and feeds for farm purposes and the better methods of feeding. Abundant opportunity for illustration of breeds of live stock and for instruction in scoring animals is afforded at the Farm and in the near vicinity.

Exceptional facilities for instruction in dairying are afforded in connection with the Dairy School, where several of the better styles of separators, churns, butter-workers, milk-testers, etc., are in use, and the student has an opportunity to become familiar with the various systems of handling milk, and expert in manipulating the apparatus.

Critical studies of the work of American and foreign Agricultural Experiment Stations are made in connection with each of the agricultural courses, by lectures, collateral reading and theses. Original investigation in agricultural or allied lines is required throughout Senior year in preparation for graduation thesis.

Botanical subjects are studied during the last three years of the course. The work begins with a careful study of the plant cell as fundamental to an understanding of vegetable structure and physiology. This is followed by a study of typical species of the lower plants with reference to their special structure, physiology, development and relationship. In the work upon Systematic Botany especial attention is given to the grasses, the clover family, weed-plants and trees. Elective courses in Morphology, Embryology, and Physiology of Plants, offer opportunity for further work along similar lines. During the course in Plant Pathology a study is made of the nature and causes of plant diseases and the remedies for the same. In connec-

tion with this work there is opportunity for special bacteriological studies. The spraying apparatus used in the Experiment Station work, the facilities of the green-houses, bacteriological laboratory, and collections of dried and alcoholic specimens furnish opportunities for work of a thoroughly practical nature.

The new Botanical Laboratories in the Williams Science Hall are supplied with simple and compound microscopes, paraffin baths, microtomes, ovens, etc., for bacteriological work, a special plant room and apparatus for the experimental study of the physiology of plants, photographic apparatus and dark room. The Herbariums of the University and the Experiment Station are open to students who are prepared to use them with profit. An elective course offers opportunity for more extended laboratory studies of bacteria and fungi.

Horticulture is required of students in the Agricultural course through one year; and an additional required half-year's work (see Agriculture 5) applies equally to agriculture and horticulture. As far as possible horticulture is brought into vital connection with modern scientific thought. The student is prepared to solve whatever problems may confront him, rather than taught by rote the empiricisms of a handicraft. Every effort is made to secure directness and accuracy in original investigation and to foster an intelligent love for horticultural pursuits. Orchards, gardens, green-houses and laboratories are open to constant use.

Veterinary Science is a required study during one-half of the course. The student learns first the general structure of domestic animals by lectures, by the examination of charts, models and museum specimens, and by the dissection of the animals themselves. The physiology of domestic animals is next studied, and then the microscopic structure of the various parts. The common diseases and their remedies are discussed in lectures, and free clinics are held for studying these diseases in the living animals. The subjects of inoculation, disinfection and immunity are considered in connection with the study of contagious diseases.

The Required work in mathematics includes Solid Geometry, Advanced Algebra and Trigonometry. More or less extended courses are required in Chemistry, Entomology, Geology, Mineralogy, English, and either French or German.

Electives. During the last two years students are allowed to select studies under the advice of instructors from any of the academic departments of the University.

The Billings Library and that of the Experiment Station are well supplied with standard works in the various departments of agriculture, and the leading agricultural, horticultural and botanical journals are found in the Reading Room.

Students in the Agricultural Department are subject to the same regulations and requirements as other students, except that residents of Vermont are not required to pay tuition. There is opportunity for several students to defray a part of their expenses by work.

Short Course in Agriculture

Students who do not wish to take the full four years' course may take a special course of one year, or of two years, selecting such studies as they are fitted to pursue. Such students may receive Certificates of Proficiency, but are not candidates for a degree.

SYNOPSIS OF COURSES

FRESHMAN YEAR	A	B	SOPHOMORE YEAR	A	B
Mathematics 1	5	5	Agriculture 1	5	
Chemistry 1	4	4	Botany 1	4	
English 1	4	4	Veterinary Science 1	2	
French 1, or			English 2	3	3
German 1	4	4	French 2, or		
Hygiene, lectures	1	1	German 2	3	3
			Agriculture 2		1
			Botany 2		3
			Veterinary Science 2		3
			Horticulture 1		3

JUNIOR YEAR	A	B	SENIOR YEAR	A	B
Agriculture 3	4		Original Investigation for Thesis	3	3
Veterinary Science 3	2		Mineralogy	3	3
Horticulture 2	3		Geology		
Agriculture 4		3	Botany 4, or		
Agriculture 5		3	Veterinary Science 4		3
Veterinary Science 4, or					
Botany 4		3			
Entomology		2			
E. Landscape gardening					
Plant Morphology, Embryology and Physiology. Forestry, Shop Work, History, French, German			E. Biology of Animals Road Making, History Political Science Philosophy, Anthropology		

Dairy School

The ninth annual session of the Dairy School begins on Tuesday, January 2d, 1900, and closes on Saturday, January 27th. The school is designed to teach in a practical manner the manufacture of butter with the latest and most approved apparatus. Three courses aggregating about fifty lectures are given on the constitution and production of milk, its creaming and churning, best methods of handling, testing, etc. Text-books with quizzes are used so far as practicable. Several hours of actual work with dairy machinery are given each day.

The class is limited to fifty, and in previous years this or a larger number of students has attended the school. The names of the class of 1899 will be found on another page. [See Index.]

LECTURES AND RECITATIONS—HOUR PLAN

	8 30—9 30	9 30—10 30	10 30—11 30	11 30—12 30
MONDAY	Latin 1 Philosophy 1 History 3 Mathematics 1* Mathematics 2 Mathematics 1E Steam Engineering Elect. Engin. 1 Agriculture 3 & 4 Veterinary Sci. 3	Greek 4 & 5 Latin 2 English 1† Philosophy 3 Sociology Physics 1 Mechanics Elect. Engin. 4. Chemistry 6 **B**	English 2 Italian & Spanish German 3 Mathematics 1** Machines & Motors Graphics Elect. Engin. 3 Entomology Agriculture 1 Veterinary Sci. 4	French 1 German 1 Anthropology **A** Geology **B** Elect. Engin. 2 Chemistry 7a&5bB Veterinary Sci. 1 Vegetable Pathol'y Hydraulics
	Chemistry 5a **A** & 3 **B**			
	Chemistry 7b		Laboratory work in Physics 4	
TUESDAY	Latin 1 Philosophy 2 History 1a Economics Mathematics 1* Mathematics 1E Mechanism Elect. Engin. 7 Agriculture 3 & 4	Latin 3 English 1 & 9 History 1b Political Science 2 Mathematics 2E Physiology 2 Mechanics Chemistry 1 & 7 b Veterinary Science Agriculture 1	Elocution French 2 German 2 Mathematics 1** Graphics Steam Engineering Chemistry 8**A** Chemistry 9**B** Horticulture 2	English 4**A**, 5**B** & 7 French 1 German 1 Anthropology **A** Geology **B** Elect. Engin. 2 Chemistry 4**A** Veterinary Science Horticulture 3 & 4 Hydraulics
	Chemistry 2		Laboratory work in Physics 2	
WEDNESDAY	Philosophy 1 History 3 Mathematics 1* Mathematics 2 Mathematics 1E Elect. Engin. 2 Agriculture 3 Agriculture 5	Greek 4 & 5 Latin 2 Declamation 1 Philosophy 3 Sociology Physics 1 Biology 1	Greek 3 English 2 Italian & Spanish German 3 Mathematics 1** Graphics Agriculture 1 Horticulture 1 Physics 4	Oratory and College Meetings
	Chemistry 5a **A**, 3 **B** & 7b			
	Engineering Construction			

THURSDAY	Latin 1 Philosophy 2 History 1a Economics Mathematics 1* Mathematics 1E Mechanism Chemistry 3 Agriculture 3 & 5	English 1†† & 9 Latin 3 History 1b Political Science 2 Mathematics 2E Physiology 2 Mechanics Chemistry 1 Agriculture 1 Horticulture 1 & 2 Elect. Engin. 4.	French 2 German 2 Mathematics 1** Graphics Elect. Engin. 3 Steam Engineering Chemistry 8 Horticulture 1 Entomology	English 4A,5B & 7 French 1 German 1 Anthropology A Geology B Elect. Engin 2 Chemistry 9 Chemistry 4 A Horticulture 3 & 4 Hydraulics
	Chemistry 7b			
	Chemistry 2		Laboratory work in Physics 4	
FRIDAY	Latin 1 Philosophy 1 History 3 Mathematics 1* Mathematics 2 Mathematics 1E Steam Engineering Chemistry 7b Agriculture 3 & 5	Greek 4 & 5 Latin 2 English 1† Elocution†† Philosophy 3 Sociology Mathematics 2E Botany 1 Chemistry 7a&5bB Horticulture 2	Greek 3 English 2 Italian & Spanish German 3 Mathematics 1** Machines & Motors Graphics Elect. Engin. 3 Horticulture 1 Agriculture 1	Forensics French 1 German 1 Mineralogy A Vegetable Pathol'y Chemistry 6B
	Eleectrical Engineering 7 Engineering Construction		Laboratory work in Physics 2 Descriptive Geometry	
SATURDAY	Philosophy 2 History 1a Economics Hygiene Elect. Engin. 1 Agriculture 3 & 4	Latin 3 History 1b Mathematics 2 E Biology 1 Military Science II Mechanics Veterinary Sci. 4	French 2 German 2 Astronomy Military Science I Chemistrv 8A & 9B Veterinary Sci. 1	French 6 Philosophy 4 Military Sci. III Chemistry 7b Chemistry 6 Veterinary Sci. 3 Hydraulics
	Chemistry 7b			

* Chemical and Agricultural Students
** Classical and Literary-Scientific Students
‡ For Junior Chemists
† First Section
†† Second Section

I Freshman
II Sophomore
III Junior
IV Senior

A First half-year.
B Second half-year.
E Engineers

HOUR-PLAN

	2 00—3 00	3 00—4 00	4 00—5 00
MONDAY	Greek 2 English 3 & 6 Mathematics 1** & 3	Greek 1 French 3	
	Descriptive Geometry Laboratory work in Botany 1 Laboratory work in Physics 1†† Laboratory work in Mineralogy **A** Mechanical Engineering Drawing II Chemistry 2 Shop work III Plant Physiology		
TUESDAY	Mathematics 1** Declamation II	Greek 1 French 4 & 5	General Drill
	Laboratory work in Chemistry 1†† Laboratory work in Biology 1 Laboratory work in Physics 1† Chemistry 3 Drawing 1 † History 3 Shop work III		
WEDNESDAY	Greek 2 English 3 & 6 Mathematics 1** & 3	French 3	
	Laboratory work in Chemistry 1† Laboratory work in Physics 1†† Laboratory work in Botany 1 Chemistry 3 & 7b Shop work II Plant Physiology Drawing 1††		
THURSDAY	Mathematics 1**	Greek 1 French 4 & 5	
	Laboratory work in Chemistry 1†† Laboratory work in Biology 1 Laboratory work in Physics 1† Drawing 1† Chemistry 3 & 7b Mineralogy **A** Shop work III		
FRIDAY	Greek 2 English 3 & 6 Mathematics 1** & 3	Greek 1 French 3	General Drill
	Laboratory work in Chemistry 1† Drawing 1†† Laboratory work in Biology of Animals Chemistry 3&7b Plant Physiology Shop work II		

ALUMNI LECTURE COURSE, 1898-99

A series of fourteen lectures by non-resident speakers, free to all members of the University, was given in the large hall of the Williams Science Building, and attended by full audiences. For this important addition to the regular teaching force of the institution the University is indebted chiefly to Mr. Frederick A. Richardson of the class of 1895, who gave much time and effort to arrange the course and ensure its success. The program is subjoined.

November 7. Prof. Franklin H. Giddings, Ph. D., of Columbia University.

The Popular Instruction Most Necessary in a Democracy.

November 21. Prof. Lester F. Ward, LL. D., of the Smithsonian Institute, Washington, D. C.

Nature and Nurture, or Heredity and Opportunity.

December 5. Prof. Ira N. Hollis, of Harvard University.

The Influence of the Navy on our Foreign Relations.

December 19. Virchand Raghavji Gandhi, B. A., M. R. A. S., of Bombay, India.

The Political and Industrial Outlook in India.

January 9. Hon. Carroll D. Wright, LL. D., U. S. Commissioner of Labor, Washington, D. C.

The Relation of Invention to Labor.

January 23. Dr. Lewis G. Janes, M. A., Director of the Cambridge Conferences.

Origin and Early Manifestations of the Religious Sentiment.

February 6. Prof. Amos E. Dolbear, Ph. D., of Tufts College.

Electricity and Civilization.

February 20. Miss Jane Addams, of Hull House Social Settlement, Chicago.

English and American Social Settlements.

March 6. Mr. E. Charlton Black, of Cambridge, Mass.
Certain Aspects of the Modern Novel.

March 20. Rev. William Norman Guthrie, of Cincinnati, O.
William Blake, Mystic, Poet and Painter. Illustrated.

April 17. Prof. Crawford Howell Toy, LL. D., of Harvard University.
Religion of the Polynesian Peoples.

April 24. Mr. Edwin D. Mead, Director of the Old South Historical Work, Boston, Mass.
The Study of History.

May 1. Mr. Thomas Davidson, Author of "Education of the Greek People."
Greek Democracies.

May 15. Prof. Josiah Royce, Ph. D., of Harvard University.
Psychological Basis of Our Religious Ideas.

DEPARTMENT OF COMMERCE AND ECONOMICS

In harmony with an educational movement which is in progress in the leading institutions of the United States and Great Britain, the Trustees of the University of Vermont have decided to organize a Department of Commerce and Economics. The coming century promises to be one of great industrial and commercial enterprise, and presents at once a demand and an opportunity for men of trained business ability. While native endowments and practical experience will always be leading features in business success, it is believed that in the sharper competitions of the future a decided advantage will accrue to those who have had a training wisely adapted to secure those qualities and habits, mental and moral, which promote business efficiency. As this department is a new one in our Universities we shall endeavor to learn, gradually and by careful study and experience, what course, or courses, will best accomplish the end in

view. But the plan which naturally suggests itself is to lay a broad basis of thorough training in English, the modern languages, the mathematics, history, and some at least of the material sciences, and add to these extensive and specialized courses in economics, commercial geography, commercial law, the history of industrial development, transportation, statistics, and to some extent the details of industrial processes and business operations and methods, such as book-keeping, banking, and financiering.

Mr. John H. Converse of Philadelphia, a Trustee of the University, to whose enlightened and progressive views of modern education the inception of this project is due, has partially endowed this department by the gift of $50,000. The attention of other business men is invited to the movement thus happily initiated, in the hope that they will see in it the opportunity of giving an impetus and a direction to commercial education in a way which is full of promise for the elevation and increased efficiency of business in the future.

VERMONT AGRICULTURAL EXPERIMENT STATION

BOARD OF CONTROL

Pres. M. H. Buckham, *ex-officio, Chairman*
Hon. E. J. Ormsbee, *Brandon*
Hon. Cassius Peck, *Burlington*
Hon. G. S. Fassett, *Enosburgh*

OFFICERS OF THE STATION

J. L. HILLS, B. S ..... *Director and Chemist*
G. H. PERKINS, Ph. D..... *Entomologist*
L. R. JONES, Ph. B..... *Botanist*
F. A. WAUGH, M. S..... *Horticulturist*
F. A. RICH, V. S., M. D..... *Veterinarian*
Hon. CASSIUS PECK..... *Farm Superintendent*
C. H. JONES, B. S..... *Chemist*
B. O. WHITE, Ph. B..... *Assistant Chemist*
G. W. STRONG..... *Dairyman*
MARY A. BENSON..... *Stenographer*
Hon. E. H. POWELL..... *Treasurer*

The Experiment Station was established as a department of the University of Vermont and State Agricultural College in 1886. The State made a small appropriation to it for four years. The General Assembly of 1898 passed a bill providing for certain expenses incurred in the observance of the State law. Since 1888 it has received the funds appropriated by Congress under the provisions of the Act commonly known as the "Hatch Act," approved March 2, 1887. The object and duty of Experiment Stations thus established in connection with the Agricultural Colleges of the country is stated in Section 2 of that Act as follows: "It shall be the object and duty of said experiment station to conduct original researches or verify experiments on the physiology of plants and animals; the diseases to which they are severally subject, with the remedies for the same; the chemical composition of useful plants at their different stages of growth; the comparative advantages of rotative cropping as pursued under a varying series of crops; the capacity of new plants and trees for acclimation; the analyses of soils and water; the chemical composition of manures, natural or artificial, with experiments designed to test their comparative effects on crops of different kinds; the adaptation and value of grasses and forage plants; the composition and digestibility of the different kinds of food for domestic animals;

the scientific and economic questions involved in the production of butter and cheese ; and such other researches or experiments bearing directly on the agricultural industry of the United States as may in each case be deemed advisable, having due regard to the varying conditions and needs of the respective States or Territories."

It is the wish of the Board of Control to make the Station as widely useful as its resources will admit. Every Vermont citizen who is concerned in agriculture, whether farmer, manufacturer or dealer, has a right to apply to the Station for any assistance that comes within its province to render, and the station will respond so far as lies in its power. All communications relating to agriculture, horticulture, plant or animal disease, insects, etc., are fairly considered, and, so far as possible, promptly answered.

The Station acts as a bureau of information upon matters of agricultural interest in a five-fold manner :

1. By the investigation of matters pertaining to the science and practise of agriculture and by the publication and distribution of the results of experiments in the form of Bulletins and Reports.

2. By articles appearing in the agricultural and general press.

3. By direct correspondence with individuals of all classes, particularly with farmers.

4. By the personal contact of members of the station staff with the farming community at institutes, fairs, by visits, etc.

5. By so conducting farm operations that visible and tangible evidence of the results of the application of science to agriculture may be shown to all interested.

The Station has issued since its establishment eleven annual Reports and seventy-three bulletins. The publications of the past year have aggregated 410 pages of printed matter. The reports and bulletins of the Station are sent upon application, without charge, to any Vermont address.

MILITARY INSTRUCTION

In accordance with an Act of Congress, an officer of the United States Army is stationed at the University as Professor of Military Science and Tactics, and male students in the departments of Arts and Sciences are required to take part in military drill and instruction three hours each week. A neat, inexpensive uniform is worn during drill.

The drills take place twice a week and are so conducted as to afford healthful exercise, which, while not severe, tends to develop an erect figure and carriage. A building 150 by 70 feet is used as an armory, and a course of military gymnastics is combined with the drills. The military discipline, though enforced only during the hours for drill, is designed to develop soldierly honor and those ideas of promptness, order and obedience to lawful authority which are applicable to all callings in life.

The theoretical instruction is given to each class once a week by recitations, lectures and practical work. It embraces, besides the Drill Regulations of the U. S. Army, the elementary principles which govern the art of war, such as officers of a volunteer army should be conversant with when first called into the field.

Students are marked as in other courses of instruction, and upon the graduation of each class, the names of those students who have shown especial aptitude for military service are reported to the United States War Department and to the Adjutant General of the State, and the names of the three most distinguished students in Military Science and Tactics are inserted in the United States Army Register.

MILITARY ORGANIZATION

The students are organized into a battalion, consisting of four companies. The officers are taken from the Senior class, the sergeants from the Junior class, and the corporals from the Sophomore class.

The following is the Roster of officers and non-commissioned officers for the present year:

MAJOR

Royden E. Beebe

CAPTAINS

1. James O. Walker
2. Horatio N. Drury
3. Delano E. Farr
4. Charles A. Tracy

FIRST LIEUTENANTS

1. Dell B. Allen (Adjutant)
2. Glenn C. Gould
3. Thomas R. Powell
4. Harry C. Libby
5. Napoleon A. Laury
6. Guy W. Bailey
7. William D. Grout
8. Fred W. Hubbard
9. Carroll D. Partridge
10. Arthur Boyce
11. Robert D. Kellogg

SECOND LIEUTENANTS

1. Jesse Tobey
2. Percy Byington
3. Charles Sturgess
4. Ellery Webster
5. James Aiken
6. Joshua Kirkpatrick
7. Lee C. Abbott
8. Arthur E. Lovett
9. Fred R. Pember
10. Orville G. Wheeler

SERGEANT MAJOR

Howard R. Smalley

FIRST SERGEANTS

1. Aaron H. Grout
2. Dean H. Perry
3. Martin A. Pease
4. Carl N. Thomas

SERGEANTS

1. A. J. McKellow, (color sergt.)
2. E. H. Reed (Q. M. sergt.)
3. E. W. Lawrence
4. A. F. Ufford
5. F. C. Locke
6. R. S. Morse
7. C. B. Griswold
8. A. W. Kingsland
9. P. M. J. Corry
10. A. W. Butler
11. C. S. Dow
12. J. B. Porter
13. E. E. Parker
14. G. S. Brand
15. A. S. Bailey
16. S. R. Carpenter
17. E. H. Buttles.

CORPORALS

1. C. H. Senter
2. H. J. Adams
3. A. T. Hutchinson
4. L. D. Beckley
5. W. E. Putnam
6. H. P. Hudson
7. J. M. Wheeler
8. D. M. Rice
9. L. M. Munson
10. C. P. Williams
11. A. C. Woodbury
12. C. R. Peck
13. R. M. Sears
14. G. O. Bryant
15. F. M. Larchar
16. E. D. Clapp

REGULATIONS

ABSENCES

1. The Absences of students shall be in charge of a Committee of the Faculty.

2. Students in all departments of the University, with the exception of those in the Medical department, are required to attend Prayers in the Chapel on all mornings when they have a college exercise the first hour.

3. Students not in their seats at Chapel when the bell ceases tolling will be marked absent.

4. A student's Unexcused Absences from Chapel exercises must not exceed twenty-five per cent of the whole number of the exercises which he is obliged to attend under § 2. Such unexcused absences shall be treated as specified in §§ 7 and 8.

5. Excuses for absence will in general be granted only for sickness, and for absence incurred by students who are obliged wholly or in part to support themselves, while actually engaged in work for such support.

6. The number of unexcused absences which are allowed in any subject during the half-year shall be the same as the number of exercises held weekly in that subject. Thus in a two-hour course, two absences will be allowed during the half-year; in a three-hour course, three absences, etc.

7. A student whose unexcused absences during a half-year exceed the number allowed in § 6 shall be placed on probation, and his parent or guardian shall be notified of his delinquency. A student who is placed on probation shall not be allowed to take part in the work of any students' organization, such as the Base Ball Nine, the Glee Club, etc. (also similar class organizations), nor shall he attend the convention of any secret society or other organization meeting out of town. Probation in one study will deprive a student of unexcused absences in all other studies. *In every case probation shall remain in effect until removed by the Absence Committee.*

8. A student who, after being placed on probation, shall incur further unexcused absence from required exercises in the same study in which he has been delinquent, shall be suspended on vote of the Absence Committee for a period of not less than ten days. While under suspension a student, if he lives away from Burlington, shall be required, in case the Absence Committee so direct, to return to his home. If his home is in Burlington, he shall be required to absent himself from the University grounds.

9. No student may be absent from Burlington, when such absence involves failure to attend any required exercise, without the permission of the Absence Committee; and leave of absence for the purpose of attending the exercises of any students' organization must also be obtained beforehand from the Committee.

10. After a Recess work will be resumed with the first afternoon exercise.

11. For one day before and one day after a Recess each absence shall count as two.

12. Excuses for absence must be put in writing, dated and signed, and deposited with the Secretary of the Absence Committee. Such excuses must be presented within two weeks after the absences are incurred, otherwise they will not be considered by the Committee. In case of sickness the Committee may require the certificate of a physician.

Athletics

1. No athletic contest shall take place before four o'clock in the afternoon on any day but Saturday.

2. All arrangements or schedules for contests to take place out of Burlington must be submitted for approval to the Athletic Committee.

3. At least two weeks before an intended contest, the manager of any athletic organization shall submit to the Athletic Committee for its approval a list of candidates for the team.

No student will be permitted to join or continue as a member of any athletic, musical or other similar college organization unless he maintain a fair standing in all the studies of his course. The membership of such organizations shall be subject to the approval of the Committee on Studies.

Such students as pursue a partial course of study may not become members of students' organizations except by vote of the Faculty. They are required to drill unless excused by the Faculty.

EXAMINATIONS

At the close of each half-year all students are examined in the studies of that half-year. These examinations may be written, or oral, or both, at the discretion of the Instructor. The results of these examinations are recorded and a transcript of each student's record is sent to the parent or guaradian.

Those whose scholarship exceeds a minimum pass-mark, 60 per cent, are grouped in four classes, designated by A, B, C, and D, A being the highest. Those who fail to reach a standing of 60 per cent. are assigned by a group designated by $\times$ or x.

A Senior who fails to clear off all delinquencies of the first three years by the end of the first half of his fourth year, thereupon ceases to be a candidate for a degree.

Hereafter the Faculty will recommend for graduation *only those students whose work is completed by 6 P. M.* of the Wednesday preceding Commencement.

RELIGIOUS SERVICES

The Institution, while not connected with any particular denominational body, and having members of many communions in its Board of Instructors, aims to impress religious truths and obligations upon all students. A responsive Religious Service is held every morning in the College Chapel, which the students are required to attend.

A flourishing Young Men's Christian Association of students is maintained, and is in close union both in sympathy and co-operative work with the Young Men's Christian Association of the city. The young women of the University also maintain a similar organization. The numerous churches of the place give to the students hospitable welcome to their services and activities. A voluntary Bible Class of students is conducted by the President on Sunday afternoons.

HONORS

Honors may be awarded at graduation for General High Standing in Scholarship, and also for conspicuous attainments in any one of the departments named below.

The candidate for Honors in general scholarship must have attained grade A in at least one-half of his work, grade B in at least one-half of the remainder, and have fallen below grade C in no department or subject.

Honors may be granted by the Faculty for unusual proficiency in any of the subjects following: Greek, Latin, French, German, English, History, Philosophy, Political Science, Mathematics, Biology, Chemistry, Physics, Mechanics, under these conditions: The candidate must have taken with credit the equivalent of six three-hour courses (i. e., eighteen lecture "hours" or "periods" extending through the year) in the subject offered, or in such cognate subjects as may have been designated or accepted by the Head of the department in which honors are sought. He must also have passed satisfactorily a special examination in such additional work as may have been accepted or assigned by the Instructor; or have presented a satisfactory thesis on a subject previously approved; or have fulfilled both these conditions, as the Instructor in charge of the department may determine.

Applicants for Honors in special fields must make application to the Faculty in writing not later than November 1 in their Senior year; and must prepare their theses and be ready for the special examination not later than May 10.

The Honors awarded at graduation shall be indicated on the commencement program, and the graduate who wins Honors for general high standing may have the words *cum laude*, or *magna cum laude*, inscribed on his diploma, the special addition to be determined by vote of the Faculty.

On the morning of Commencement Day an Honor List shall be published, containing the names of all who have gained honors at

graduation; of all who have won prizes during the year; of those who are appointed to speak at Commencement; and of such other graduates as may have presented essays or theses of conspicuous merit. This shall be posted on the official Bulletin Board and in the Library, and copies shall be placed on sale. This List shall also be printed in the next annual catalogue, with the names of the speakers on Founder's Day, and of those graduates whose proficiency in Military Art and Science has gained for them a recommendation to the Adjutant-General of the State and to the War Department of the United States.

DEGREES

For the Degrees of Bachelor of Arts and Bachelor of Philosophy see page 15.

Degrees in Science

The Degree of Bachelor of Science *in Civil Engineering* or *in Electrical Engineering*, or *in Mechanical Engineering*, is conferred upon students in the department of Engineering, who shall complete the courses of study corresponding respectively to these titles.

The Degree of Bachelor of Science *in Chemistry*, is conferred upon the completion of the work required by the Department of Chemistry.

The Degree of Civil Engineer may be conferred upon Bachelors of Science of this University, who have taken the Bachelor's degree for work in Civil Engineering, if they furnish satisfactory evidence that they have pursued further technical studies for at least one year, and in addition have engaged in professional work in positions of responsibility for another year.

The first of the above requirements may be satisfied by pursuing at the University, under the direction of the Faculty, a prescribed amount of study for a time, not necessarily consecutive, equivalent to a college year. If the candidate does not reside at this University, his course of study must be approved in advance by the Professor of

Civil Engineering, and he must prepare a satisfactory thesis on some engineering topic, to be presented together with a detailed account of his professional work one month at least before the date of the annual Commencement at which he expects to receive his degree.

The conditions upon which the Degrees of Electrical Engineer and Mechanical Engineer are conferred upon Bachelors of Science of this University, who have taken these degrees for work done in Electrical Engineering and Mechanical Engineering, are analogous in character and amount to those given for the degree of Civil Engineer.

In the Department of Agriculture the degree is Bachelor of Science *in Agriculture.*

The Master's Degree

1. The degree of Master of Arts, or Master in Science, may be conferred upon resident graduates of one year's standing of this or any other reputable college, and upon non-resident graduates of two years' standing of this University, who shall pursue a course of liberal study (not professional) subject to the approval of the Faculty.

2. Candidates for either degree will be required to present a thesis upon some branch of liberal study pursued since graduation, and to pass an examination before the Faculty.

3. The thesis must be presented at least two weeks before Commencement, and be approved before the candidate shall be admitted to examination.

4. The thesis must be written on paper of uniform size and description, and must be accompanied by an analytical table of contents and a full list of authors consulted. A copy of the same shall be furnished to be deposited in the University Library.

5. The examination shall be both written and oral, and copies of examination papers shall be kept on file at the Library. The examination shall be conducted by a committee of the Faculty, who shall appoint the time and place of examination, decide upon the

merits of the candidate, and, if they deem him worthy, recommend him to the Trustees for graduation.

Students who are not candidates for a degree may be awarded Certificates for Proficiency in recognition of the work which they have done.

EXPENSES

The Tuition Fee is $60 per annum, one-half payable at the close of each half-year.

The annual fee of $20 for incidental expenses is charged against all students, one-half payable at the close of each half-year. This fee is a commutation sum for charges formerly made under several headings, and *does not include charges for breakages, damages, etc.*, which are assessed upon the perpetrators, or, when they are unknown, upon the whole body of students.

Every student upon entering the University is required to pay a Registration Fee of $10. The payment of this completes the requirements for admission, and is in lieu of the first half-yearly installment of the annual fee.

All students pursuing Laboratory courses are required to pay for material and breakage. This fee varies, but has averaged in the department of Chemistry $15, in that of Mineralogy $5, in that of Physics $5, in that of Mechanical Engineering $5, and in the Biological laboratories $1.50, for the half-year. Each student must in addition pay for his own breakage.

[After the close of the present college year the fee will be $10 per half-year for all Laboratory courses in Chemistry except Course 7b (Organic Laboratory) in which the fee will be $15 per half-year. Breakage an additional charge in all courses.]

Every student pays an annual fee of $2 for supplying the Reading Room with periodicals.

A fee of $8 is charged for the Diploma given at graduation, and a fee of $5 for a Certificate of Proficiency.

An ordinary Scholarship cancels the amount of the tuition fee; a State Scholarship both the tuition and the annual fees. But no student shall have his scholarship credited upon his bills while his college work is in arrears, or while any charges stand against him on the Treasurer's books.

Special Students are not eligible to scholarships. They will be charged $10 a half-year for each full course of study (3 hours or more), and $5 for each half course (2 hours or less); $5 for the use of the Library, and $5 as Registration fee; but in no case shall a Special student be required to pay more than the full tuition fee.

Payment of Bills

Students temporarily absent from the University are charged as if present. Students entering an advanced class are required to pay one-half of the back tuition, unless from another college. Interest at the rate of six per cent. will be charged upon all bills from the day on which they become due.

All students will hereafter be required at the beginning of each college year, before joining their respective classes, to present to the Committee on Studies the Treasurer's certificate that they have paid up all arrearages.

Rooms and Room Rent

Room Rent in the old College dormitories ranges from $15.00 to $37.50 per year, according to the location of the room and the number of the occupants. This does not include fuel and lights.

The students' rooms are furnished at the expense of the University. Students need to provide only carpets, mattresses, bed clothing and chamber ware. The beds are furnished with wire mattresses. All rents include care of room by college servants.

The Converse Hall

The Converse Hall, completed in the year 1895, is an elegant and substantial four-story edifice in the collegiate-gothic style, built of

Rutland marble, furnishing handsome suites (single and double) for about ninety students. It is heated by steam, finished throughout in hard wood and supplied with all necessary furniture in oak. There is a fireplace in each study and all the rooms can be lighted by electricity. Each of the three sections is supplied with bathing facilities, and one of them contains a Common Room for general uses. Beside the furniture supplied in the old dormitories, the bedrooms here are furnished with hair mattresses, bolster, pillow and blankets. Rents for single suites range from $15.00 to $80.00; for double suites, from $35.00 to $70.00 for each occupant. All rooms are cared for by college servants.

The fine old mansion on Main street, lately occupied by Mr. Lawrence Barnes, and formerly by Gov. Van Ness, has been purchased and fitted up for the use of the young women students. It is surrounded by ample grounds and commands a delightful prospect. The household is under the supervision of a matron and a housekeeper.

There is a Commons Hall on the College grounds at which good table board is furnished to students at cost. The rate of board at present is $3.00 per week, or $2.75 if paid in advance.

Good board with room may be obtained in private families at $4.00 to $5.00 a week. Other expenses, for clothing, traveling, books, stationary, society and class taxes, etc., vary with the circumstances and habits of the student.

The Central Vermont and Rutland Railroads and the Champlain Transportation Company carry students for fare at mileage rates.

The Williams Science Hall

completed in 1896, is a fire-proof structure of granite, brick, steel and artificial stone, with rich terra cotta decoration. It is of three stories, with a well-lighted attic available for laboratory work, and a basement also adapted to the uses of the Scientific Departments. It is supplied with the latest and best devices for heating and ventilation

and for practical laboratory work, and is occupied by the Chemical, Physical, Electrical and Biological sections of the University.

SCHOLARSHIPS

Scholarships, affording aid to students of limited means to the amount of tuition, have been endowed as follows:

The Washburn Scholarships, twelve in number, by Daniel Washburn, M. D., of Stowe, for the benefit of young men studying for the Christian ministry, or, in default of such applicants, of other deserving young men.

The Louisa H. Howard Scholarships, seven in number, by Miss Louisa H. Howard of Burlington.

The Sarah B. Jacobs Scholarships, seven in number, by Mrs. Sarah B. Jacobs of Boston, for the benefit of graduates of Brigham Academy, at Bakersfield, Vt.

The Bertman Scholarship, by John Bertman, Esq., of Salem, Mass.

The Green Scholarship, by Horace Green, LL. D., of New York city.

The Fairbanks Scholarship, by the Hon. Erastus Fairbanks, of St. Johnsbury.

The Parker Scholarship, by the Rev. Charles C. Parker, D. D., '41, in memory of himself and son, Charles Edmund Parker, '67.

The Westford Scholarship, by the Hon. L. P. Poland, LL. D., of St. Johnsbury.

The Converse Scholarship, by John H. Converse, '61, of Philadelphia.

The Edwin Wright Marsh Scholarship, endowed by Charles P. Marsh, Esq., '39, of Woodstock, in memory of his son of the class of 1872, for the benefit, in the first instance, of students from the town of Weathersfield, Vt.

The Charles Munson Marsh Scholarship, by the same, available first for students from Woodstock, if such apply.

The Charles P. Marsh Scholarships, five in number, available first for needy and worthy young men or women from the County of Windsor.

The Lizzie S. Converse Scholarship, by bequest of Miss Lizzie S. Converse of Burlington, for poor and deserving students in the Classical department.

The Rich Scholarship, by Charles W. Rich, Esq., '96, of St. Albans.

The Rich Scholarship, by the same, for the benefit, first, of students from the town of Swanton, Vt.

The Isle La Motte Scholarship, by N. S. Hill, Esq., of Burlington, for the benefit of students from Isle La Motte, and failing such, from Craftsbury.

The Shaw Scholarship, by the Hon. William G. Shaw, of Burlington, of the class of '49.

The Class of '61 Scholarship, endowed and made available in 1891.

The Samuel Sidney Smith Scholarship, by Mrs. S. S. Smith, of Burlington.

Appointments are made to these scholarships by the Faculty from term to term, and are conditioned on the attainment of a certain grade of scholarship and on exemplary conduct. The benefit of a scholarship is forfeited and back tuition becomes due, if a student abandons his course unnecessarily, or to join another college.

The endowment of additional scholarships would enable the University to extend its benefits to those who can not otherwise afford the expense of a four years' maintenance in College. The minimum endowment is one thousand dollars. The annual payment of $60 relieves one student from the payment of tuition alone; of $80, from the payment of tuition and annual fees.

State Scholarships

Thirty State Scholarships, covering tuition and incidental expenses in the Classical or Scientific Departments, are now available. By an Act of the last Legislature (1898) these scholarships are limited to a period of two years. Nomination to these scholarships rests with the senators from the several counties, to whom application should be made.

The Jeudevine Fund

now available in part, is loaned in small sums to "poor and deserving students" in the Classical and Scientific Departments, who are residents of Vermont. The loans must be well secured, and must be repaid within a specified time after the student leaves college. Applications may be made to the Treasurer of the University.

PRIZES

The Bissell Prize for Progress*

A prize of $25 will be awarded to the student who, in the judgment of the Faculty, is entitled to the greatest credit for effort and attainments in his studies upon completion of the Junior year.

The Kingsley Prizes for Elocution

Prizes of $25, $15 and $10 are offered to members of the Sophomore and Freshman classes for the best declamation of passages in oratorical prose.

The Julia H. Spear Prizes for Young Women

Prizes of $25, $15 and $10 are offered to young women of the University for excellence in reading.

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*Named for the Rt. Rev. Wm. H. A. Bissell, D. D., 1836.

The Phelps Prize

A prize of $50 in gold, endowed in memory of the late Edward Haight Phelps, C. E., class of 1872, will be awarded by the Faculty each year at Commencement to a graduate of that year in Civil Engineering who shall have exhibited conspicuous merit in professional studies, and high and noble traits of personal character. A special certificate will accompany the prize, indicating the conditions upon which it has been awarded. In case no award shall be made in any year, the same amount of money will be expended in the purchase of books on the subject of Civil Engineering for the use of the Department.

The Howard Prizes

Mrs. Hannah T. Howard of Burlington left by will $1,200, the income of which is to be awarded in prizes. From the income of this fund, three prizes of $25 each will be awarded in 1900, to candidates for admission to the Freshman Class who shall pass the best entrance examinations in Greek, in Latin and in Mathematics.

THE LIBRARY

The Library of the University, selected with special reference to the several departments of study, contains 57,000 volumes, including the library of the late Hon. George P. Marsh, 12,500 volumes, a collection of the highest value in the departments of Philology, European Literature and History, and Physical Geography. This collection is the gift of the late Hon. Frederick Billings of Woodstock, and is deposited in a room especially provided and elegantly appointed to receive it. The whole library has been carefully arranged by subjects with accession and shelf catalogues. A Card Catalogue on the dictionary plan is in progress, being already complete for the subjects, Literature, Philology, History, Philosophy, Religion, Natural

Science and portions of Sociology, Industrial Arts and Fine Art. A full Catalogue of the Marsh collection, by authors and subjects, has been published.

The beautiful and commodious Billings Library, erected at a cost exceeding $150,000, with a shelving capacity of 100,000 volumes, contains the general library of the University and the special collections, with the exception of such Scientific works as are deposited in the Reading Room of the Williams Science Hall.

The current Periodicals with many Cyclopædias and other Works of Reference are to be found in the Central Hall, while the Apse, originally designed for the Marsh Collection, is now appropriated to bound sets of periodicals, and such volumes as are reserved for special class use.

A munificent gift of high intrinsic value and of exceptional interest to all book lovers came to hand just before the last Commencement—a consignment from London of 2,845 volumes, to be known in the Library catalogues as the Stevens-Whittinghams Collection. The donors are B. F. Stevens, esq., of London, once a member of the University, and the heirs and descendants of the Charles Whittinghams (uncle and nephew) who created the Chiswick Press and gave it a world-wide fame as the producer of finely printed and handsomely illustrated editions. The collection consists in large part of the volumes printed by the Whittinghams during nearly a hundred years. It will be of interest to add that Mr. Stevens was a partner in the Chiswick Press many years before its sale to the present proprietors in 1880, and that not a little of the artistic beauty of the borders and other decorations used by the Press is due to the exquisite taste and skill of the two daughters of the younger Whittingham, one of whom (Miss Charlotte Whittingham) became in 1865 the wife of Mr. Stevens.

During the year just closed the Hawkins Collection of books and documents relating to the Civil War has been shelved in a separate

room for convenience of consultation. A recent important addition to the original gift brings the number of titles up to 1,670.

The Vermont books from the Chittenden Collection have also been placed in a room by themselves, with the intention of ultimately gathering all documents which specially concern the history of the State into a Vermont Alcove, an arrangement which will be appreciated by all investigators of the early times.

A unique copy of Jackson's Treatise on Wood Engraving, with Chatto's Third Preface (London, 1839), just received from the bindery, deserves a separate note. The original work has been enlarged to four thick volumes by the insertion of more than one thousand illustrations, selected and mounted by Mr. Chittenden with the intention of illustrating the history and development of the art from the beginning. The volumes contain many rare and costly prints, and represent an immense outlay of time and labor most lovingly bestowed.

From a friend, who chooses to remain unknown, additional volumes have been received of the Jesuit Relations and Allied Documents, of which fifty-six volumes have been placed on the shelves. The value of these documents to the student who can be satisfied only with first-hand knowledge of the sources of American History can hardly be overestimated.

Among the friends who have remembered the Library with valuable gifts are the following: Hon. E. J. Phelps, Hon. H. H. Powers, 1855, Senator Ross, Senator Morrill, Hon. R. S. Taft, Hon. G. G. Benedict, 1847 (37 volumes), M. N. Baker, 1886, J. H. Converse, 1861, H. A. Davis, Rev. Charles F. Dole, Hon. C. M. Depew, L. C. Herrick, M. D., 1864, Charles A. Hoyt, 1858, John E. Peck, (31 volumes), the sons of Rev. M. N. Hutchinson (55 volumes), W. M. Crombie, 1893, Prof. L. J. Huff (120 volumes, French, unbound), The Cynic Board (2 volumes).

The State Library has sent us 18 volumes.

The whole number of accessions since the last issue of the catalogue is 1850.

The income from the various funds available for the increase of the Library, including Miss Maria Loomis' bequest of $10,000, amounts to a little over $1,000 a year.

The Library is open during term time from 8.30 A. M. to 6 P. M. on week days for consultation and drawing books, and for reading and reference on Sunday afternoons from 2 to 4 P. M., and every week day in vacation from 9 A. M. to 12 M., and from 2 to 4 P. M. The Reading Room of the Library is supplied with the leading scientific and literary periodicals. Persons not connected with the University have free use of the Library for consultation, and on special permission from the President or Librarian, are allowed to draw books. Students have also the use of the Fletcher Free Library, a collection of 25,500 volumes.

The Library Committee solicits gifts of books and pamphlets relating to Vermont History and the lives of natives of Vermont; also copies of all books written by Vermonters, or published in the State, and of files of State papers, especially of the first half of this century or earlier.

The Committee desires also to collect all books, essays, pamphlets, etc., written by Officers or Alumni of the University, and would esteem it a great favor if such writings should be sent to the Library for permanent preservation.

☞ *Of the Annual Catalogues of the University supposed to have been issued from 1810 to 1830, inclusive, the Library possesses only those of 1822, 1823 and March, 1825. The alumni and other friends are earnestly requested to help in completing our files.*

THE MUSEUM

The various collections exhibited in the Museum building, though primarily gathered and arranged with reference to study and for illus-

trating lectures, are of general interest. The rooms are accessible to the public on week days from 9 A. M. until 5 P. M. For the general guidance of visitors the following outline of the arrangement of the specimens is given:

On the first floor is the Mineralogical collection, which contains several thousand specimens representing nearly all the species mentioned in the manuals. Some of the specimens are unusually fine, notably a splendid series of Sicilian sulphurs, celestes and associated minerals collected by the Hon. George P. Marsh, and a number of Hartz Mountains and other European Minerals collected by the Rev. Edward Hungerford. There is also an extensive series of the rocks of Europe and a very complete set of the lavas of Vesuvius, the gift of Mr. Hungerford. A nearly complete set of the rocks and marbles of Vermont and several hundred specimens of foreign marbles are also placed in this room, though only a part can be shown for lack of space. Besides foreign birds and mammals, there is a nearly complete representation of the mammals, birds and fishes native to this State, and an alcoholic collection of the reptiles and fishes of the United States. There is a smaller collection of mounted skeletons of vertebrates and numerous crania and other bones, including a perfect lower jaw of the sperm whale. The nests and eggs of many of the birds common in Vermont have been obtained and most of them are arranged in cases. On this floor is a fine bas relief, dating from about 875 B. C., taken from one of the palaces at Nimroud, the gift of Mr. John H. Converse.

On the second floor of the Museum building is a large collection of shells made up of selections from the original Museum collections and from those of the Hon. L. E. Chittenden and Prof. G. W. Benedict, which were given to the Museum a few years ago. To these the fine collection of Dr. William C. Hickok has recently been added. Smaller but good collections of corals, echinoderms and sponges occupy cases near the shells. Of these the living forms are in many cases shown by the beautiful Blaschka glass models. The wall cases of this floor contain the collection of fossils. This is pri-

marily intended to illustrate the geology of Vermont and all the horizons found in the state are well represented, but all the epochs recognized in the manuals are more or less fully represented by specimens from various American and European localities. Several important additions to this part of the Museum have been made during the past few years. Besides several hundred specimens of coal plants from the Carboniferous of Pennsylvania and Illinois, a considerable series of plant fossils has been obtained from the Cretaceous and Tertiary of the West. There has also been recently added a small, but valuable, collection of skulls and other parts of the skeletons of Vertebrates from the western Tertiary, including some very fine specimens of fishes from the Wyoming Green River shales.

The Archæological collections include the largest and by far the most important series of objects illustrating the prehistoric times of Vermont that has been brought together. There are several thousand specimens of the work of the former occupants of the Champlain Valley in stone, bone, copper, shell and earthenware, some of them very rude, others as finely formed and perfectly finished as the best from other parts of the United States. Smaller, but not unimportant, collections from the Ohio and Mississippi Valleys and from the Pacific coast are also displayed.

The Pottery of the mound-builders and of ancient and modern Pueblo tribes is represented by numerous examples and a very interesting collection consisting of several hundred jars, dishes and vases, stone and bone implements, basket work, bits of cloth, skulls, etc., etc., from cliff houses in Mancos Cañon, Colorado, has recently been placed in cases. There are a few specimens of stone and pottery from Mexico and a much greater number from pre-Columbian graves in Nicaragua.

The Ethnological collection is constantly becoming of greater interest and value. It is placed by itself in a room recently added to the main building. There are small, but in some cases at least very choice collections of the weapons, implements and ornaments of the

natives of Australia, Polynesia, Africa and Oriental countries. The very fine Reed collection of objects collected among the Sioux Indians is of special interest, and similar specimens from the southern tribes are also exhibited.

In addition to the collections already mentioned there is a large Herbarium containing a complete series of Vermont plants as well as thousands of specimens from other parts of the United States and foreign lands. This is placed in a room specially prepared for it in the Willams Science Hall. There are also collections of native and foreign woods, of fruits and seeds, with several thousand specimens of insects, chiefly from New England and the northern United States, and a good collection of Greek, Roman and modern coins. These latter collections are none of them located in the Museum building, but may be examined upon application to the Curator.

The Cannon Collection

The collection of Oriental objects obtained in India by the late Henry LeGrand Cannon and by him bequeathed to the University, has now been received from his executors, and is displayed in a room added to the Museum by special provision of the donor.

The Collection includes fabrics and draperies, many of them exquisitely embroidered; bronze and porcelain lamps; chairs, stand, and screen of teak-wood elaborately carved; numerous articles of silver, chiefly ornamental; musical instruments; household articles of brass and iron, and other objects which cannot be catalogued here; armor, Indian, Persian and Japanese, some of it elegantly wrought with inlays of gold and selver; various articles of Thibetan origin, a shrine, prayer-wheel, amulets, etc., with fine specimens of European arms of the 15th and 16th centuries.

Should visitors find the Museum building closed, a key may be obtained at the Library.

THE PARK GALLERY OF ART

TRUSTEES

PRES. M. H. BUCKHAM *President ex-officio*
PROF. H. A. P. TORREY *Secretary*
HON. F. C. KENNEDY *Treasurer*
HON. G. G. BENEDICT COL. LEGRAND B. CANNON.
HON. E. J. PHELPS

It is the aim of the Trustees of the Art Gallery to gather into a small but good collection, such works of art, paintings, engravings, models, casts, photographs, etc., as will serve to illustrate the history and the principles of both ancient and modern art. The nucleus of such a collection has already been secured. Contributions are solicited in any of the following classes, or funds for the purchase of the same:

1. Paintings—not copies—by either American or foreign painters. 2. Works of Sculpture: statues, busts, reliefs, medallions, whether originals or copies made under the eye of the scuplor. 3. Original drawings. 4. Casts from noted sculptures. These are especially valuable in art studies and are comparatively inexpensive. 5. Bronzes, terra cottas, enamels, faiences, ancient vases, works in metal and glass, tapestries, etc., in which the artistic merit is conspicuous. 6. Valuable engravings, wood-cuts and etchings. 7. Photographs from originals of the great masters in painting, and from the best works in sculpture and architecture. 8. Works on art, biographies, dictionaries, criticisms, etc. The names of donors will be inscribed on works of art presented to the gallery.

The Gallery has recently received from the Hon. Wm. J. Van Patten of Burlington a valuable painting—The First Communion—by the French artist Constant Mayer, for many years now a resident of New York.

DEPARTMENT OF MEDICINE

FACULTY

MATTHEW HENRY BUCKHAM, D. D.
President

JOHN ORDRONAUX, M. D., LL. D.
Emeritus Professor of Medical Jurisprudence

JOEL WILLISTON WRIGHT, A. M., M. D.
Emeritus Professor of the Principles and Practice of Surgery

ALBERT FREEMAN AFRICANUS KING, A. M., M. D.
Professor of Obstetrics and Diseases of Women

ASHBEL PARMELEE GRINNELL, A. M., M. D.
Professor of the Theory and Practice of Medicine; Consulting Physician to the Mary Fletcher Hospital and to the Fanny Allen Hospital

RUDOLPH AUGUST WITTHAUS, A. M., M. D.
Professor of Chemistry and Toxicology

JOHN HENRY JACKSON, A. M., M. D.
Professor of Physiology and Microscopic Anatomy

ABEL MIX PHELPS, M. D.
Professor of Surgery; Consulting Surgeon to the Mary Fletcher Hospital; Surgeon to the Charity Hospital, N. Y. City

HENRY CRAIN TINKHAM, M. D.
Dean of the Faculty; Professor of General and Special Anatomy; Attending Surgeon to the Mary Fletcher Hospital

JAMES NATHANIEL JENNE, M. D.
Professor of Materia Medica and Therapeutics and of Clinical Medicine

JOHN BROOKS WHEELER, A. B., M. D.
Adjunct Professor of Surgery; Professor of Clinical and Minor Surgery; Attending Surgeon to the Mary Fletcher Hospital

PATRICK EUGENE MCSWEENEY, M. D.
Adjunct Professor of Obstetrics: Attending Physician to the Mary Fletcher Hospital and the Fanny Allen Hospital

FREDERICK RUBERT STODDARD, M. D.
Adjunct Professor of Materia Medica; Consulting Physician to the Mary Fletcher Hospital

LYMAN ALLEN, A. B., M. D.
Adjunct Professor of Physiology

HARRIS RALPH WATKINS, A. B., M. D.
Adjunct Professor and Demonstrator of Anatomy; Attending Physician to the Mary Fletcher Hospital

HORACE L. WHITE, B. S.
Adjunct Professor of Chemistry

EVERARD ALLEN WILSON, M. D.
Assistant Demonstrator of Anatomy

PROFESSORS OF SPECIAL SUBJECTS

AUGUSTUS PALMER DUDLEY, M. D.
Professor of Surgical Diseases of Women

FRANK WILFRED PAGE, A. M., M. D.
Professor of Diseases of the Mind

DILLON BROWN, A. M., M. D.
Professor of Diseases of Children

JUDSON EARL CUSHMAN
Professor of Medical Jurisprudence

GEORGE THOMAS JACKSON, A. M., M. D.
Professor of Dermatology

MARSHALL COLEMAN TWITCHELL, M. D.
Professor of Diseases of the Eye, Ear and Throat; Assistant Ophthalmologist to the Mary Fletcher Hospital

EUGENE FULLER, M. D.
Professor of Genito-Urinary and Venereal Diseases

FOLLEN CABOT, JR., M. D.
Assistant to the Chair of Genito-Urinary Diseases

WILLIAM A. LYMAN, M. D.
Clinical Assistant

INSTRUCTORS

HORATIO NELSON JACKSON, M. D.
Surgery

SAMUEL ERASTUS MAYNARD, M. D.
Theory and Practice of Medicine and Physical Diagnosis

FREDERICK ELLSWORTH CLARKE, M. D.
Obstetrics and Gynaecology; Consulting Physician to the Fanny Allen Hospital

ANNOUNCEMENT 1900

The Medical College of the University, which was organized in 1822, but whose relation to the University has hitherto been chiefly nominal, has just been reorganized as a co-ordinate Department of the University under the full control of the Board of Trustees.

The school has thus materially increased its possibilities of usefulness, being now able to take advantage of all that the University can furnish in the way of better facilities for both teaching and study. The Medical Faculty having already established a Four Years' Course of study under the graded system, and having added the necessary recitation rooms, laboratories and apparatus required by this method of teaching, the increased facilities now accessible make the advantages offered to medical students second to those of few institutions of the kind.

As the Four Years' Course was adopted in January, 1898, this is the last year in which it will be possible for students to graduate after a three years' course. Students presenting satisfactory evidence of having matriculated prior to January 1st, 1898, and of having attended two full courses of study in any accredited medical college or colleges, will be admitted to the graduating class this year.

The forty-eighth Annual Course of Instruction will begin Thursday, January 4th, 1900, and continue until June 28th.

The Medical College Building, given to the University by the late John P. Howard, is a substantial brick edifice on Pearl Street, fronting the College Park. The lecture-room amphitheatre will seat comfortably three hundred and fifty students.

The laboratories for Practical Chemistry, Physiology, Histology and Bacteriology, and the Dissecting Room for Practical Anatomy, are ample in size, and supplied with the modern conveniences and apparatus required for chemical experiments and physiological and anatomical demonstrations.

The Museum of the College is spacious, well lighted, contains a large and carefully arranged collection of specimens and preparations —many of them rare—illustrating both normal and abnormal structures. The Museum is always open to students.

During his four years' study the student will receive instruction in the following branches: Anatomy, Physiology, Chemistry, Materia Medica and Therapeutics, Practice, Obstetrics, Surgery, Diseases of Children, Ophthalmology and Otology, Pathology, and Bacteriology, Neurology, Diseases of the mind, Hygiene, Medical Jurisprudence, Venereal Diseases, Dermatology, Laryngology, and Gynæcology. This instruction is given by scholastic and clinical lectures, recitations and laboratory work. The curriculum includes laboratory courses in Urinary Analysis, Histology, Pathology and Bacteriology, and practical work in Physical Diagnosis, Surgery and Demonstrative Obstetrics, each student being *required* to take all these courses, unless he present evidence of having taken the same in some other recognized institution. (See Requirements for Graduation, p. 102.)

CLINICAL ADVANTAGES

The Mary Fletcher Hospital, erected and endowed by the generosity of the lady whose name it bears, was opened in 1876 for the treatment of patients. Additions and improvements have been made from year to year, until now it is unsurpassed in its appointments for the care of medical and surgical cases.

The Hospital consists of a large and elegant administrative building with many rooms for private patients, and two ample pavilion-wards. In a second building connected with the wards and administrative building by a corridor is a large amphitheatre capable of seating two hundred persons. There are also an anæsthetizing and a recovery room opening into the amphitheatre. Rooms for out-patients are also attached to the building. In fact every arrangement for Clinical Instruction is provided. Medical and Surgical Clinics will be held in the amphitheatre during the entire session.

REQUIREMENTS FOR ENTRANCE

Applicants will be required to pass an Entrance Examination in *Arithmetic, Grammar, Geography, Orthography, American History, English Composition* and *Elementary Physics* before they can be regularly enrolled as students in good standing in this Department. But applicants who may have failed in one or more branches at these examinations may be enrolled as *conditioned* students; they must make up the deficieney however during the first year, before they can be enrolled as students in regular standing.

EXCEPTIONS:—Such entrance examination will not be required of applicants of any of the following classes:

1. Those who declare themselves *in writing* not to be candidates for the Degree in Medicine from this College.
2. Those who have received the Bachelor's Degree from a College or University which maintains a satisfactory academic standard.
3. Those who have passed satisfactorily the entrance examination to the Academic Department of any College or University which maintains a satisfactory academic standard.
4. Those who have passed the entrance examination to a Medical school having requirements for entrance equivalent to those adopted by this Faculty.
5. Those who have received a Medical Student's Certificate from the Regents of the State of New York, or from any similarly constituted authority in other States.
6. Those who have received a Diploma or a Certificate for any ten studies from the Regents of the State of New York, or from any similarly constituted authority in other States.
7. Those who have satisfactorily completed a three years' course in High School, Normal School or Academy.

Examinations for entrance will be held in January, March and June. Detailed information in regard to Examinations for admission to the Second or Third year of the course, also in regard to the conditions of advancement in course from year to year, will be found in the special Announcement of this Department.

REQUIREMENTS FOR GRADUATION

Four full courses of lectures of at least twenty weeks each, the last at this College, will be required of all students who matriculated subsequently to January, 1898. Those who matriculated before this date will be required to attend *three* full courses, according to the regulations in force before the four-year system was adopted.

No period of practice will be taken as the equivalent of any lecture course.

No candidate indebted to the College will be admitted to an examination.

Candidates for the degree of Doctor of Medicine must have attained the age of twenty-one years, and must present full certificates of the time of study, of age and of moral character. Each candidate is required to deposit his examination fee with the Secretary of the Faculty one month before the close of the session.

Before presenting himself for examination, and in addition to attendance upon the regular lectures, both scholastic and clinical, it is further required that he shall have pursued the study of Practical Anatomy, by dissection, under the guidance of a demonstrator; that he shall have taken at least one course of laboratory instruction in Urinary Analysis, in Histology, in Pathology, and Bacteriology; and one course of practical work in Physical Diagnosis, Practical Surgery and Demonstrative Obstetrics, either in this or in some other regular Medical College.

He must also pass satisfactory written or oral examinations in Anatomy, Physiology, Chemistry, Materia Medica and Therapeutics, Practice of Medicine, Surgery and Obstetrics before the Medical Faculty and Board of Medical Examiners appointed by the State Medical Society. But if he has previously passed the final examinations in Anatomy, Physiology, Chemistry or Materia Medica before the Faculty, he will not be re-examined in the branch or branches in which he has passed. But the Faculty reserves the right to re-examine students at the end of the fourth year upon all the subjects taught

during the four years, it being the intention of the Faculty to establish a final quiz at the end of the fourth year in order that graduates may be the better prepared for the examinations by State Licensing Boards.

The tickets and diplomas of Eclectic and Homœopathic, or Botanic Colleges, or the Colleges devoted to any special system of medicine, are considered irregular, and will not be recognized under any circumstances. Certificates from preceptors who practice any particular system of medicine, or who violate in any way the Code of Ethics adopted by the profession, will not be accepted under any circumstances, even if the preceptors are regular graduates in medicine.

Graduates of other regular Medical Colleges who desire a degree from this University, must pass a satisfactory examination in Anatomy, Physiology, Chemistry, Materia Medica and Therapeutics, Practice of Medicine, Surgery and Obstetrics.

No credit in time or in lectures shall be given any student by virtue of his degree of Pharmacy, or Veterinary Surgery.

Degrees *in absentia* are not conferred by this University under any circumstances whatever.

FACULTY PRIZES

The Faculty have established two Prizes for general proficiency in examination—a First Prize of Fifty Dollars, and a Second Prize of Twenty-five Dollars. The prizes will be awarded as follows:

The ten students who pass the best examinations for their degree will be allowed to compete in a written examination for the prizes; of this number, the five who rank highest shall be called Honor Men, and will each receive a *Special Diploma of Honor;* and of these last, those who attain the first and second rank shall receive respectively the first and second prizes.

The Honor Men of 1899 were: Geo. H. Sanborn, W. E. Denning, L. P. Adams, P. Lodge and E. W. Markham.

The First Prize was awarded to George Henry Sanborn; the Second Prize to Wm. Edward Denning.

FEES

Matriculation Fee, payable each term.....$ 5 00
Full Course of Lectures, each year 110 00
Single Ticket, for those who wish to take one or more subjects and not the whole course..... 20 00
Fee for graduation, payable once and not returnable..... 25 00

Graduates of other regular Medical Schools are admitted on payment of the matriculation fee and $25.00.

Graduates of this school are admitted without fee.

Theological students are admitted on payment of the matriculation fee only, unless intending to graduate in medicine, in which case they will be required to conform to the above conditions.

Students will be required to deposit with the Treasurer $5.00, from which will be deducted the value of any bones taken from the museum which may fail to be returned, and any charges for breakage in the laboratories. The remainder of such deposit, or the whole, if there be no charge against it, will be returned to the student at the close of the term.

All fees must be paid to the Secretary, and are payable in advance.

BOARD may be obtained for from $3.50 to $5.00 per week. Good accommodations can be found for students who wish to board themselves. Many adopt this method at a great reduction in expense. Students who intend to board themselves will find such bedding and culinary articles as they may require furnished with the rooms.

After registering, every student is furnished with a certificate entitling him to reduced rates on railroad and steamboat lines running into Burlington.

[For special arrangements of the Academic Faculty for the accommodation of intending students of Medicine, see pages 46 and 47.]

For further particulars address the Secretary,

B. J. ANDREWS, M. D.,
Mary Fletcher Hospital,
BURLINGTON, VT.

STUDENTS

GRADUATE STUDENTS

NAME	RESIDENCE	ROOM
Max Walter Andrews, A. B. 1899	*W. Berkshire*	215 Pearl
Chauncey Marsh Goodrich, A. M.	*Burlington*	483 Main
Clifton Durant Howe, A. B. 1898	*Newfane*	89 N. Prospect
Mabel Nelson, PH. B. 1899	*Burlington*	118 Pearl
Duncan Stuart, B. S. 1898	*Burlington*	59 N. Prospect

SENIOR CLASS

Lee Clark Abbott	LS	*Rumney, N. H.*	27 N. Willard
James Hawley Aiken	Ch	*Benson*	415 Pearl
Dell Beeman Allen	LS	*Burlington*	52 N. Winooski
Fannie Howe Atwood	LS	*Burlington*	27 Buell
Guy Winfred Bailey	Cl	*Essex Junction*	Essex Junction
Royden Eugene Beebe	Ch	*Burlington*	67 N. Union
Edward Cyril Bessette	CE	*Plattsburgh, N. Y.*	25 M. C. H.
Arthur Boyce	ME	*Winchendon, Mass.*	4 N. C.
Mary Tracy Brownell	LS	*Essex Junction*	411 Main
Amy Maud Burt	LS	*Swanton*	178 S. Prospect
Frederic Percy Byington	ME	*Charlotte*	36 N. C. H.
Edith Louise Carpenter	LS	*Webster, Mass.*	177 S. Prospect
John Grixston Currier	LS	*Rutland*	192 S. Union
John Morrill Downer	EE	*Stowe*	31 M. C. H.
Horatio Nelson Drury, jr.	Cl	*Burlington*	179 Elmwood
Samuel Campbell Dunlop, A. B.	CE	*Poultney*	5 S. C.
Arthur Woodbury Edson	Cl	*Cavendish*	468 College
Delano Eugene Farr	Cl	*Bristol*	42 S. C. H.
John Lowe Fort, jr.	LS	*Winooski*	Winooski
Glenn Carlos Gould	Cl	*Morrisville*	89 N. Prospect

Ag, Ch, Cl, LS, indicate Agricultural, Chemical, Classical and Literary-Scientific Courses. CE, EE, ME, stand for Civil, Electrical and Mechanical Engineering. N. C., S. C., M. C., stand respectively for North, South and Middle College; N. C. H., S. C. H., M. C. H., for North, South and Middle Converse Hall.

William Dougald Grant	Ag	*Barre*	14 Exp. Station
Mary Wilson Harrison	Cl	*Brandon*	411 Main
Frederick William Hubbard	Cl	*Rutland*	46 S. C. H.
James Chesterfield Jones	Cl	*Burlington*	433 S. Union
Robert Douglas Kellogg	Cl	*Plattsburgh, N. Y.*	41 M. C. H.
Joshua Bartlett Kirkpatrick	Cl	*E. Deering, Me.*	41 S. C. H.
Guy Philbrick Lamson	Ch	*Randolph*	63 Buell
Napoléon Arthur Laury	Ch	*Burlington*	272 North
Harry Chester Libby	CE	*Lowell, Mass.*	5 N. C.
Arthur Edward Lovett	LS	*Chatham Centre, N. Y.*	M. C.
James Leslie Mackay	EE	*Peacham*	45 M. C. H.
Edwin Ellsworth Miller	ME	*Newport*	31 M. C. H.
Alice Josephine Morris	Cl	*Webster, Mass.*	411 Main
Charles Tidd Murray	EE	*Charlestown, N. H.*	89 N. Prospect
Martha Ella Needham	Cl	*Leicester Junction*	215 Pearl
Henry Bigelow Oatley	ME	*Rochester, N. Y.*	1 N. C. H.
Carroll Dunham Partridge	Ch	*Bennington*	60 N. Prospect
Frederick Russell Pember	Ag	*Putney*	15 Exp. Station
Thomas Reed Powell	Cl	*Burlington*	70 Williams
Louis Philip St. Cyr	ME	*Woodstock*	43 M. C. H.
Wilbur Cyrus Sawyer	CE	*Essex Junction*	Essex Junction
Perley Spaulding	Ag	*Bethel*	18 Exp. Station
Charles Marcellus Sturgess	Cl	*Sheldon*	M. C.
Jesse Weston Tobey	Cl	*Burlington*	123 N. Winooski
Charles Amasa Tracy	Cl	*Burlington*	149 N. Union
Walter Wallace Tyler	LS	*Burlington*	262 Pearl
Ellery Elmer Webster	Cl	*Barton*	11 N. C.
Orville Gould Wheeler	Cl	*Burlington*	335 S. Union
Walter Byron Williams	Cl	*Brockton, Mass.*	41 N. C. H.
Oscar Bradford Wood	Ag	*Georgia*	14 Exp. Station
Charles Robert Young	EE	*N. Craftsbury*	9 N. C.

JUNIOR CLASS

Wellington Esty Aiken	LS	*Benson*	415 Pearl
Arthur Scott Bailey	LS	*St. Albans*	40 Clarke
Herman David Bone	Ag	*Wells River*	12 Exp. Station
Howard Slocum Booth	Ch	*Swanton*	25 N. Union
Charles Irving Boyden	Ag	*Randolph Centre*	12 Exp. Station
John Henry Brackett	EE	*St. Johnsbury*	38 Hickok Pl.
Graton S. Brand	Ch	*Essex*	112 Loomis
Theron Cumins Brooks	CE	*Randolph*	31 N. C. H.
Elva Mabel Brownell	Cl	*Burlington*	196 S. Willard
Albert Wayne Butler	Cl	*E. Jamaica*	2 N. C. H.
Ernest Hiram Buttles	Cl	*Brandon*	140 Colchester
Silas Ralph Carpenter	LS	*Richford*	27 N. Willard
Fred Wade Carrier	Cl	*Bennington*	2 S. C.
Harley Wheeler Chittenden	Cl	*Burlington*	160 Pine
Patrick Michael James Corry	CE	*Montpelier*	9 S. C.
Marshall Baxter Cummings	Ag	*N. Thetford*	16 Exp. Station
Samuel Sibley Dennis, jr.	LS	*Hardwick, Mass.*	89 N. Prospect
Carroll Howard Drown	Cl	*Johnson*	464 North
Helen May Ferguson	LS	*Burlington*	77 N. Union
Bernard Peter Finnegan	CE	*Hyde Park*	9 S. C.
Ivah Winifred Gale	LS	*Newport*	301 Maple
Kathryn Knee Gebhardt	LS	*Shelburne*	411 Main
George William Gilson	ME	*Bethel*	7 S. C.
Clifford Burnham Griswold	ME	*Felchville*	2 Colchester
Aaron Hinman Grout	LS	*Derby*	32 N. C. H.
Inez Adelaide Grout	LS	*Derby Centre*	229 Colchester
Mary Adelle Grout	LS	*Derby Centre*	229 Colchester
Charlotte Frances Hale	LS	*Burlington*	150 N. Union
Margaret Mary Healey	LS	*Wallingford*	216 S. Prospect
George Henderson	Cl	*Burlington*	30 Chase
Charles Allen Kern	Ch	*Burlington*	72 S. Winooski
Allan Wilson Kingsland	Cl	*Burlington*	267 S. Union

Henry Page Lapelle	ME	*Swanton*	44 M. C. H.
Edwin Winship Lawrence	Cl	*Rutland*	45 S. C. H.
George Samuel Lee	LS	*Irasburg*	13 S. C.
Arlington Pearl Little	EE	*Burlington*	342 Pearl
Fred Clarence Locke	LS	*Springfield*	36 S. C. H.
Ernest Nelson McColl	CE	*S. Ryegate*	45 N. C. H.
Harris David McDonald	Cl	*Swanton*	34 Hickok Pl.
Madge Elizabeth McElroy	LS	*Bakersfield*	170 N. Prospect
Alfred John McKellow	Cl	*Keeseville, N. Y.*	14 N. C.
Josephine Adelaide Marshall	Cl	*St. Johnsbury*	47 N. Prospect
Roy Sidney Morse	LS	*Montpelier*	89 N. Prospect
Florence Eliza Nelson	LS	*Burlington*	118 Pearl
Warren Adolphus Noyes	Cl	*Hyde Park*	100 Church
Fred Jonathan Park	EE	*Lyndon*	13 N. C.
Earl Elkins Parker	ME	*Barre*	89 N. Prospect
Martin Albert Pease	CE	*Springfield, Mass.*	32 S. C. H.
Dean Homer Perry	Cl	*Barre*	89 N. Prospect
James Burnham Porter	Cl	*Rutland*	10 Buell
Edward Hanson Reed	Ch	*Burlington*	41 Loomis
Henry Stanley Renaud	Ch	*Burlington*	135 Elmwood
William Edson Ross	Cl	*Franklin Falls, N. H.*	35 M. C. H.
James Rhitenhouse Scott, jr.	LS	*New York, N. Y.*	26 N. C. H.
Dan German Seager	Cl	*Brandon*	10 N. C.
Howard Russell Smalley	Ch	*Burlington*	388 S. Union
Samuel Waldo Smith	ME	*Barre, Mass.*	23 M. C. H.
Allen Robert Sturtevant	LS	*New Haven*	7 S. C.
Carl Noyes Thomas	EE	*Lowell, Mass.*	10 S. C.
James Tyndall	Cl	*Morrisville*	42 Colchester
Albert Frank Ufford	Cl	*Fairfax*	6 N. C.
Frederick Paul Wadleigh	Cl	*E. Berkshire*	42 N. C. H.
Earle Hubbell Welles	CE	*Sunderland*	46 N. C. H.

SOPHOMORE CLASS

Harold James Adams	LS	*West Haven*	89 N. Prospect
John Edward Adams	Cl	*Swanton*	42 S. C. H.
Clayton Clifford Alexander	CE	*Burlington*	507 St. Paul
George Percival Auld	Cl	*Burlington*	424 S. Union
Alice Lillian Bean	Cl	*Newport*	411 Main
Arthur Sanders Bean	Cl	*Randolph*	25 Lafayette Pl.
Luther David Beckley	CE	*Barre*	42 N. C. H.
George David Brodie	Cl	*Burlington*	378 S. Union
George Orin Bryant	Ch	*Williston*	20 S. C.
Mary Lucretia Butler	Cl	*Sunderland, Mass.*	411 Main
Geneva Claire Carpenter	LS	*Brookfield*	177 S. Prospect
John Wesley Church	ME	*Bellows Falls*	192 S. Union
Ernest Dwight Clapp	CE	*Burlington*	177 S. Prospect
Helen Gordon Clark	LS	*Vergennes*	192 S. Union
Alice Harriett Derby	LS	*Essex Junction*	Essex Junction
James Edward Donahue	LS	*Essex Junction*	Essex Junction
Florence Louise Douglas	Cl	*West Haven*	177 S. Prospect
Charles Scott Dow	Ch	*Burlington*	8 S. Willard
Bertha Isadore Field	LS	*N. Springfield*	411 Main
Grace Anna Goodhue	LS	*Burlington*	301 Maple
Charles Edwin Goodwin	LS	*Kennebunkport, Me.*	89 N. Prospect
Willard Levi Goss	Ag	*St. Johnsbury*	13 Exp. Station
Leon Everett Grout	Ag	*Newfane*	17 Exp. Station
Mary Wheaton Hall	LS	*Rutland*	483 Main
John Nelson Harvey	LS	*Montpelier*	89 N. Prospect
Helen Lida Hodge	LS	*Burlington*	85 N. Prospect
Fayette Elmore Hubbard	Ag	*Burlington*	39 Greene
Harry Pratt Hudson	EE	*Bennington*	25 S. C. H.
Edwin Crawford Hunt	Cl	*Oakham, Mass.*	2 N. C. H.
John Martin Hunt	ME	*East Peacham*	45 M. C. H.
Harold Frederick Huntley	Ch	*Essex Junction*	Essex Junction
Abbott Trask Hutchinson	Cl	*Burlington*	45 S. C. H.

Elizabeth Converse Johnson	Cl	*Burlington*	74 Adams
Harry Bliss Joyner	Cl	*Burlington*	29 S. Willard
Arthur Leon Kelly	Ch	*Lowell, Mass.*	2 S. C. H.
Nelson Kellogg	Cl	*Plattsburgh, N. Y.*	41 M. C. H.
George Eugene Lamb	EE	*Stockbridge*	1 N. C.
Forrest Metcalf Larcher	Ch	*Webster, Mass.*	46 S. C. H.
Anna Mary Lilley	Cl	*Hyde Park*	49 Buell
Howard Harrington Marsh	CE	*Winchendon, Mass.*	4 M. C. H.
Howard Lucius Martin	Cl	*Washington, D. C.*	21 M. C. H.
Louis Fuller Martin	CE	*Washington, D. C.*	21 M. C. H.
Lysander Herbert Merrihew	Ch	*S. Burlington*	Spear
Maud Leonora Merrihew	LS	*S. Burlington*	Spear
Floyd Arkley Miller	ME	*Newport*	3 M. C. H.
George Glenn Morse	EE	*Morrisville*	89 N. Prospect
Levi Miller Munson	Cl	*Morrisville*	89 N. Prospect
Cassius Reuben Peck	Cl	*Burlington*	Exp. Farm
Julia Emily Pember	LS	*Wells*	2 Colchester
Louis Edward Pope	Ch	*Burlington*	38 Elmwood
William Eli Putnam	CE	*Springfield*	144 S. Willard
Don Martin Rice	EE	*Westford*	89 N. Prospect
Irving Lyman Rich	LS	*Richville*	1 N. C.
Harley Curtis Sanborn	Ag	*N. Thetford*	16 Exp. Station
Robert Maynard Sears	CE	*Plainfield, Mass.*	5 S. C.
John Elliot Seaver	ME	*Quechee*	45 N. C. H.
Clarence Hiram Senter	Ch	*Montpelier*	35 S. C. H.
Evelyn Kendall Severance	Ch	*Brattleboro*	40 Clarke
Donna Marie Slater	LS	*Essex Junction*	268 Colchester
Albert Orange Smith	CE	*Barre*	42 N. C. H.
Leonard Pearsons Sprague	Ag	*East Randolph*	13 Exp. Station
Arthur Duane Stearns	Cl	*Burlington*	35 Loomis
Ethel Marilla Stevens	LS	*Williston*	60 Buell
Reuben Richardson Strait	Ag	*Fairfax*	15 Exp. Station
Frank Goodspeed Taylor	EE	*Poultney*	5 S. C.

Richard Hills Taylor	Cl	*Proctor*	49 Mansfield
Julius Arthur Tellier	Cl	*Felchville*	35 N. C. H.
Arthur Hastings Tenney	EE	*Royalton*	8 S. C.
Warren Horace Tenney	EE	*S. Royalton*	8 S. C.
Herbert George Tupper	LS	*Bakersfield*	27 N. Willard
Charles Hugh Waddell	LS	*Johnsburgh, N. Y.*	16 N. C.
Arthur Day Welch	EE	*Sharon*	89 N. Prospect
Arthur Clayton Wells	Ag	*Bakersfield*	68 Colchester
John Martin Wheeler	Cl	*Burlington*	335 S. Union
Lavater Edson White	CE	*Brooklyn, N. Y.*	31 S. C. H.
Carey Persia Williams	LS	*Burlington*	193 S. Union
Richard Dudley Wilson	CE	*Bethel*	56 Church
Adin Cyprian Woodbury	ME	*Perkinsville*	16 S. C.
Maxwell Eugene Woodward	ME	*Ludlow*	133 King

FRESHMAN CLASS

Leighton Emerson Abbott	Cl	*Randolph*	71 N. Winooski
William Burnham Alexander	E	*Melrose H'l'ds, Mass.*	106 Colchester
George Edward Baldwin	E	*Burlington*	85 King
Day Truman Barrett	Ag	*Thetford Centre*	Exp. Farm
Florence Adelaide Barrett	LS	*Burlington*	18 Pearl
Norton Dickenson Beach	Ch	*Burlington*	64 Buell
Murray Bourne	LS	*Burlington*	35 N. Union
John Frank Bowen	E	*Adams, Mass.*	42 Colchester
James Dowd Brennan	LS	*Burlington*	12 Centre
Nathaniel Preston Brooks	Cl	*Charlestown, N. H.*	44 M. C. H.
John Henry Budd	LS	*Enosburgh Falls*	92 Grant
Maurice Augustus Burbank	E	*Plympton, Mass.*	6 N. C. H.
Mary Ethel Colburn	Cl	*Union Village*	112 Loomis
Harley Milan Cook	E	*Shoreham*	1 N. C.
Walter Alden Dane	Cl	*Newport*	22 S. C. H.
Lyman Moses Darling	Cl	*Garfield*	104 N. Willard
William Janes Dodge	Cl	*Burlington*	55 Loomis
James Harworth Eaton	Cl	*Burlington*	170 N. Prospect

Willard Ethni Evans	Ag	*Bennington*	20 Exp. Station
Harry Edward Gage	Cl	*Burlington*	40 Converse Ct.
Ralph George Gibson	Cl	*Ryegate*	177 Pearl
Oliver Bowen Gilbert	Ag	*Dorset*	Exp. Farm
Fred Butterfield Gill	Cl	*Springfield*	36 S. C. H.
Blossom Franklin Goodrich	LS	*Richmond*	85 S. Willard
Hollis Edward Gray	Cl	*Cambridge*	89 N. Prospect
Hervey Paul Gulick	Cl	*Charlotte*	103 N. Willard
William Hardding Hahn	Ch	*Rockland, Me.*	6 N. C.
Asa Hampton Harris	E	*St. Johnsbury*	2 Colchester
Roy Herbert Harvey	E	*Newport*	22 S. C. H.
Buel Albon Hitchcock	E	*Longmeadow, Mass.*	14 S. C.
Hattie Mason Hodge	Cl	*Burlington*	88 N. Prospect
Fred Martin Hollister	Ag	*Bennington*	20 Exp. Station
Willard Eugene Holman	E	*Randolph*	71 N. Winooski
Clarence Richard Hutchinson	E	*Benton Harbor, Mich.*	5 M. C. H.
Alanson Halden Jones	Cl	*Burlington*	433 S. Union
Lucius Hinckley Jones	Ag	*Burlington*	361 S. Union
Ira Phelps Kellogg, jr.	Cl	*Monkton*	7 Hickok Pl.
Frank Caleb Kelton	LS	*St. Albans*	36 N. C. H.
George Patrick Kennehan	E	*Brasher Falls, N. Y.*	21 N. C. H.
Frank Harold Kimball	E	*Cabot*	46 N. C. H.
Earle Brush Kingsland	LS	*Vergennes*	2 Colchester
Leonard James Mack	Cl	*Vergennes*	2 Hickok Pl.
Harry Walter McKinnon	E	*Bellows Falls*	89 N. Prospect
Harry Bartlett Macrae	E	*Burlington*	63 Buell
Charles Palmer Merrill	E	*Fairfield*	18 S. C.
Crosby Miller	LS	*Washington, D C.*	24 M. C. H.
Cornelia Elva Nott	LS	*Burlington*	Proctor Ave.
Clinton James Parker	E	*North Hero*	140 Colchester
Charles Henry Pierce	E	*Royalton*	15 S. C.
George Abel Pierce	E	*St. Johnsbury*	2 Colchester
Florence Nichols Post	Cl	*St. Albans*	411 Main

Lillian Dell Rember	LS	*East Franklin*	135 Loomis
Charles Allen Riley	Cl	*Ludlow*	5 M. C. H.
George Ernest Robbins	LS	*Gallupville, N. Y.*	15 Weston
Daisy Lottie Russell	LS	*Burlington*	23 Hickok Pl.
Haroutioun Selian	E	*Catsery, Armenia*	22 Johnson
Aurelius Morse Shields	LS	*East Craftsbury*	9 N. C.
LeRoy Holton Shipman	Ch	*Winooski*	Winooski
Durrell Clarence Simonds	Ch	*Burlington*	203 Maple
Luther Pike Cheney Smith	E	*St. Johnsbury*	177 Pearl
Claude Martin Sneden	Ag	*Bristol*	18 Exp. Station
Cora Elizabeth Talbot	LS	*Stottville, N. Y.*	411 Main
Mary Louise Tracy	LS	*Shelburne*	23 Hickok Pl.
Silas Egerton Tracy	Ag	*Shelburne*	Shelburne
Roy Willard Tyler	Ch	*Burlington*	262 Pearl
Arthur Hopson Valiquette	E	*Rutland*	25 S. C. H.
Henry Wallace	Cl	*Poughkeepsie, N. Y.*	483 Main
George Frederick Wells	Ag	*Bakersfield*	68 Colchester
William Harry Weston	LS	*Montpelier*	35 S. C. H.
Charles Holmes Wheeler	LS	*S. Burlington*	Dorset
Mae Buxton Whitmore	Cl	*Urbana, Ill.*	25 Lafayette Pl.
Charles Romeo Wilder	Cl	*Burlington*	25 N. Union
John Gordon Wills	Ag	*Chateaugay, N. Y.*	17 Exp. Station
Clarence Field Worthen	Ch	*Barre*	21 S. C. H.
John Stratton Wright,	Cl	*Burlington*	4 Loomis
Daniel Albert Young	E	*Cherry Valley, N. Y.*	133 Loomis

SPECIAL STUDENTS

Marjorie Ann Batchelder	*Newport*	411 Main
Anna Margaret Bogue	*Pittsford*	411 Main
George Thomas Deavitt	*Montpelier*	42 M. C. H.
George Stacy Hicks	*Burlington*	169 Church
Blanche Estelle Marston	*Lisbon, N. H.*	411 Main
Molly E. Mower	*Burlington*	328 Pearl
Dana Joseph Pierce	*Bellows Falls*	181 S. Union
Susan Hills Tabor	*Burlington*	41 S. Prospect
James Obadiah Walker	*Burlington*	91 N. Union

MEDICAL STUDENTS, 1899

L. P. Adams.....Vt.
A. K. Aldinger.....Pa.
W. B. Allen.....Vt.
L. B. Allen.....Vt.
E. J. Alley.....Mass.
R. W. Andrews.....N. Y.
J. A. Archambault.....Vt.
H. W. Armstrong.....N. Y.
F. J. Arnold.....N. Y.
F. M. Arthur.....N. Y.
N. M. Babed.....N. Y.
H. L. Baldwin.....N. Y.
C. A. Beach.....Vt.
C. H. Beecher.....Vt.
H. H. Beers.....Conn.
G. C. Benjamin.....N. Y.
H. T. Bray.....Conn.
W. A. Brady.....N. Y.
M. O. Brown.....Me.
H. A. Brown.....Pa.
C. H. Brown.....Mass.
L. R. Brown.....N. H.
T. B. Burke.....N. Y.
L. G. Burritt.....Vt.
A. B. Call.....N. H.
T. Callahan.....R. I.
J. L. Campbell.....Vt.
S. S. S. Campbell.....Vt.
T. H. Canning.....Vt.
N. Carr.....Vt.
D. J. Clough.....Me.
I. S. Coburn.....Vt.
R. Cohn.....N. Y.
J. H. Conklin.....Conn.
F. P. Conway.....N. H.
L. H. Corey.....Vt
T. J. Cummins.....N. J.
E. P. Cushman.....N. Y.
A. H. Damon.....Me.
R. H. Dann.....N. Y.
W. E. Denning.....Vt.
T. H. Dixon.....N. B.
H. F. Dolan.....Me.
T. S. Donovan.....Mass.
P. L. Dorey.....Vt.
A. J. Douglass.....Mass.
J A. Dow.....Me.
C. B. Dunn.....P. Q.
F. E. Farmer.....Vt.
H. R. Farris.....Me.
F. F. Finney.....Vt.
J.E. Fitzgerald.....Vt.
E. T. Flint.....Me.
F. A. Fowler.....N. H.
C. A. Freligh.....N. H.
D. H. Gatchell.....Me.
H. J. Gibbons.....Pa.
E. F. Gleason.....Mass.
D. B. Goddard.....Vt.
W. A. Goodrich.....Vt.
E. Gosselin.....Vt.
O. V. Green.....Vt.
R. A. Green.....N. Y.
J. M. Griffiths.....Wales
W. J. Guinan.....N. Y.
T. H. Hack.....Vt.
A. T. Hawes.....Vt.
P. Harriman.....Vt.
R. B. Harriman.....Vt.
R. J. Harvey.....Vt.
J. H. Hays.....N. Y.
C. S. Harris.....N. H.
W. E. Hamill.....R. I.
H. B. Hanson.....Vt.
H. A. Hanaford.....N. H.
E. A. Heath.....Vt.
O. W. Hodgdon.....N. H.
M. B. Hodgskins.....N. Y.
C. P. Holt.....Vt.
V. D. Holbrook.....Vt.
H. W. Hopkins.....Vt.
A. J. Holmes.....N. Y.
C. J. Hurlburt.....Vt.
F. K. Jackson.....Vt.

J. A. Jackson.....Vt.
P. P. Johnson.....Vt.
C. K. Johnson.....Vt.
R. C. Jones.....N. H.
F. F. Joyner.....Vt.
J. F. Kendrick.....Vt.
J. T. Kerrigan.....Mass.
H. B. Ketchum.....Vt.
C. H. Kingsbury.....Vt.
W. R. Kinson.....Vt.
A. Kerghis.....N. Y.
H. A. Ladd.....Vt.
H. A. Lamb.....Me.
W. H. Lane.....Vt.
B. E. Larrabee.....Me.
C. S. Leach.....Vt.
H. Leith.....N. H.
W. W. Lemaire.....Mass.
J. P. Lenhan.....N. H.
F. C. Lewis.....Vt.
F. C. Ligouri.....Conn.
H. W. Lloyd.....Mass.
P. Lodge.....Conn.
A. F. Lowell.....Vt.
G. L. Macomber.....Vt.
R. M. Mahlman.....Me.
J. H. Malonson.....Mass.
E. W. Markham.....Mass.
G. B. Maurice.....Vt.
D. Marvin.....Vt.
E. V. Mayhew.....N. Y.
L. B. Marcou.....N. H.
F. W. McKibbon.....N. B.
W. F. Meagher.....Conn.
H. H. Moore.....Mass.
A. G. Morton.....Vt.
W. Moran.....Me.
L. B. Morrison.....Mass.
J. J. Mowry.....R. I.
P. J. Mullen.....N. Y.
L. A. Newcomb.....Vt.
F. B. Newton.....Conn.
N. E. Nichols.....Mass.
G. E. Norton.....Mass.
H. R. Nye.....Vt.
J. J. O'Brine.....N. Y.
J. F. O'Brine.....Vt.
W. T. Owens.....Conn.
H. Pache.....Vt.
C. S. Pangborn.....Mass.
G. H. Parmenter.....Vt.
A. H. Parker.....Mass.
C. A. Pease.....Vt.
H. M. Peggs.....Vt.
C. W. Phillips.....Vt.
A. E. Platt.....Vt.
E. W. Powers.....N. Y.
W. D. Preston.....N. Y.
G. C. Reid.....N. Y.
I. Rich.....N. Y.
C. M. Richmond.....Vt.
B. L. Richardson.....N. H.
J. W. Richardson.....Mass.
F. M. Rogers.....Vt.
W. R. Rowland.....Vt.
G. M. Sabin.....N. Y.
G. H. Sanborn.....N. H.
W. A. Schermerhorn.....N. Y.
W. C. Sears.....Vt.
C. A. Shaw.....Vt.
H. R. Sharp.....Conn.
D. M. Shea.....N. H.
E. Sheehan.....N. Y.
L. E. Smith.....N. Y.
C. R. Skinner.....N. Y.
C. W. Somerville.....N. B.
E. E. Sparks.....Vt.
N. C. Stiles.....Vt.
B. H. Stone.....Vt.
F. J. Stephenson.....Vt.
H. G. Stafford.....N. Y.
T. J. Strong.....Vt.
W. C. Sumner.....Vt.
H. H. Sumner.....Mass.
C. P. Sylvester.....Mass.
T. S. Tapley.....Me.
W. B. Thorning.....N. H.
G. S. Thompson.....Mass.
A. J. Thomas.....N. Y.
W. T. Tilley.....Vt.
G. H. Towle.....N. H.
F. L. Tozier.....Me.

M. A. Trudeau.....Ca.
W. A. Vanstrander..... .....Conn.
T. Walsh.....Conn.
W. L. Wasson.....Vt.
V. W. Waterman.....Vt.
R. E. Webb.....N. H.
J. L. Welsh.....N. H.
W. J. White.....Vt.
G. D. Whiteside.....Vt.
I. H. Wight.....N. H.
W. W. Wood.....Mass.
F. B. Willard..... .....Vt.
E. O. Winship..... .....Vt.
R. O. Woodruff.....N. Y.
H. M. Wyman.....Mass.

DAIRY STUDENTS, 1899

Ora H. Anderson, *South Albany*
Harry E. Brock, *Barnet*
F. A. Bellows, *Essex*
Jerry Buckley, *Wheelock*
Edward Collins, *West Berkshire*
Morillo Carpenter, *Pleasant Valley*
Homer E. Crown, *Fairfax*
Waldo W. Davies, *Hinesburgh*
C. F. Eddy, *Waiisfield*
Chauncey P. Foote, *Middlebury*
Jerry S. Faulkner, *Readsboro*
Myron L. Fleming, *Fairfax*
David Farrand, *Morrisville*
Homer W. Freeman, *Waterbury Ctr.*
James C. Gibson, *Barnet*
F. E. Gordon, *Chazy, N. Y.*
F. D. Hays, *West Rupert*
Homer E. Hewitt, *Bristol*
A. H. Hickok, *Oakland*
John Holmes, *Cream Hill*
D. H. Hackett, *Barton Landing*
Henry A. Hazen, *North Hero*
Ernest E. Hinds, *Eden Mills*
Thomas Johnson, *Craftsbury*
George Johnson, *Chippenhook*
I. H. Kendall, *Enosburgh Falls*
J. N. Longley, *North Underhill*
M. J. Leonard, *Shoreham*
Clement C. Lawless, *N. Montpelier*
G. McCormick, *Pittsford*
T. E. Macia, *Westford*
Ira G. Miller, *Westminster West*
William W. Miller, *Pomfret*
T. C. Macomber, *Pleasant Valley*
W. C. Norcross, *Burlington*
M. L. Parsons, *West Braintree*
J. S. Reynolds, *Essex Junction*
B. G. Smith, *Fletcher*
Horace Symes, *Topsham*
Lewis W. Smith, *Keene, N. H.*
G. W. Strong, *Waitsfield*
H. M. Safford, *Burlington*
F. G. Stone, *Dorset*
E. F. Thayer, *Warren*
William Terhune, *New York*
David Wilson, *Rupert*
S. L. Ward, *Post Mills*
A. E. Willard, *Burlington*
Glen Wilson, *West Braintree*

DEGREES CONFERRED IN 1898-99

HONORARY

DOCTOR OF LAWS

Hon. RUSSELL SMITH TAFT, A. M., Chief Justice of Vermont

Admiral GEORGE DEWEY, U. S. N., (October 12, 1899)

DOCTOR OF LETTERS

BENJAMIN FRANKLIN STEVENS, London, Eng.

MASTER OF ARTS

CHARLES PAINE THAYER, M. D. 1865, Boston, Mass.

IN COURSE

DOCTOR OF MEDICINE

Lemuel Payson Adams, A. B.
Albert Kurwin Aldinger
Leon Bernard Allen
Ernest Jason Alley
Harold Levi Baldwin
Lester Rupert Brown
Dexter James Clough
James Hervey Conklin
Francis Phillip Conway
William Edward Denning
Thomas Harry Dixon
Joseph Abner Dow
Frank Emerson Farmer
Harry Roswell Farris
Fred Abram Fowler
Claude Adelbert Freligh
Edward Francis Gleason
Horace Joseph Gibbons
Dana Bailey Goddard
William Edward Thomas Hamill

Herbert Bill Hanson, Ph. B.
Morgan Brewster Hodskins
Chester James Hurlburt
Fred Kinney Jackson, A. B.
Joseph Addison Jackson
Charles Kimball Johnson
James Fotheringham Kendrick
James Thomas Kerrigan
Henry Barstow Ketchum
Charles Henry Kingsbury
Adrien Kirgis
Winfred Howard Lane
Chester Sylvester Leach
Francis C. Liguori
Patrick Lodge
Louis Benjamin Marcou, Ph. G.
Erwin Walter Markham
George Byron Maurice
William Francis Meagher
Harry Herbert Moore
Arthur Oscar Morton
Frank Brownlie Newton
George Edward Norton
Williams Thomas Owens
Clifford Atherton Pease
Elmer Walter Powers
Willard DeForest Preston
Frank Matthews Rogers
George Henry Sanborn
William Avery Schermerhorn
Walter Chadwick Sears
Carlos Adams Shaw
Charles Rufus Skinner, B. S.
Lester Everett Smith
Frederick John Stephenson
Ned Carroll Stiles
Bingham Hiram Stone, A. B.
Thomas Jefferson Strong
Charles Porter Sylvester
Thomas Sumner Tapley
Albert J. Thomas
William Burton Thorning
Mark Aurele Trudeau
Walter James White
George Duff Whiteside
Row Obed Woodruff

Master of Arts

Carroll Warren Doten, Ph. B. 1895
Arthur Llewellyn Eno, A. B. Brown 1895
Charles Edward Lamb, A. B. 1893
Robert Ellsworth Lewis, Ph. B. 1892
Martin Samuel Vilas, A. B. 1894.

Civil Engineer

Moses Nelson Baker, Ph. B. 1886
George Edson Philip Smith, B. S. C. E. 1897

Bachelor of Arts

Max Walter Andrews
Alfred Ray Atwood
Charles Francis Blair, *cum laude*
Carl Brigham Brownell
Clarence Lee Cowles
Leon Ernest Daniels
Samuel Campbell Dunlop
Ernest Julius Ewing
Eliza Maybelle Farman
Frank Keeler Goss
Ada Almina Hurlburt
Frank Roland Jewett
Wait Chatterton Johnson
Robert Ashton Lawrence
Belle Thayer Morse
George Douglas Osgood
Russell Smith Page
May Winifred Russell, *cum laude*
Donald Harris Scribner
Eunice Dewey Smith
Harry Warner Smith

Bachelor of Philosophy

Warren Robinson Austin
Charles Ira Button, *cum laude*
Frank Floyd Finney
Ruth Fisher
Mary Isabelle Gregory
Charles Asahel Hubbard
Emily Wheelock Lucia
Mabel Nelson, *cum laude*
Mary Crafts Paddock
Charles Haswell Parker
Katie Lena Russell
Fanny Lydia Smith
Hermon Emerson Smith
Bessie Marian Stewart
Mary Carr Tewksbury

Bachelor of Science in Civil Engineering

John Alden Chase
Edward Pierson Hendrick

Bachelor of Science in Electrical Engineering

Robert Bass Morton

Bachelor of Science in Chemistry

Charles Alpheus Bigelow
George Howard Burrows, *cum laude*
John Oliver Presbrey
Alvin Milton Taylor
Edward Chapman Wright

BACHELOR OF SCIENCE IN AGRICULTURE

Clarence Willard Richmond Jacob Kingsley Shaw
Byron Eugene White

HONOR LIST, 1898-99

Class of 1899

GENERAL HIGH STANDING

Charles Ira Button Mabel Nelson
George Howard Burrows Charles Francis Blair
May Winifred Russell

SPECIAL HONORS

Greek:—George Douglas Osgood
English:—Max Walter Andrews
Emily Wheelock Lucia
German:—Max Walter Andrews
Eliza Mabelle Farman
Philosophy:—Belle Thayer Morse
Geology:—Alfred Ray Atwood
Chemistry:—George Howard Burrows
Agricultural Chemistry:—Jacob Kingsley Shaw

SPEAKERS AT COMMENCEMENT

Max Walter Andrews Robert Ashton Lawrence
Charles Francis Blair Mabel Nelson
George Howard Burrows May Winifred Russell
Charles Ira Button Harry Warner Smith

PRIZES

Kingsley Prizes in Declamation

First: Aaron Hinman Grout
Second: Forest Metcalf Larcher
Third: Carroll Howard Drown

Julia H. Spear Prizes in Reading

First: Mary Tracy Brownell
Second: Bertha Isadore Field
Third: Helen Gordon Clark

Junior Prize for Progress

Amy Maud Burt

Entrance Examination Prizes

Latin, John Stratton Wright, Jr.
Greek, Hattie Mason Hodge
John Stratton Wright, Jr.
Fitted at the Burlington High School
Mathematics, Ralph George Gibson
Fitted at the St. Johnsbury Academy

Honorable Mention

Latin, Florence Adelaide Barrett
Fitted at the Burlington High School
Henry Wallace
Fitted at the Poughkeepsie (N. Y.) High School
Mathematics, Henry Wallace
Florence Adelaide Barrett

Speakers on Founder's Day, 1899

Hon. Henry H. Powers, LL. D., M. C., class of 1855
Charles Amasa Tracy, 1900
Robert Ashton Lawrence, 1899

The three students reported in 1899 to the U. S. War Department and to the Adjutant General of Vermont, as having shown most aptitude for military service (see page 72) were the following:

Wait Chatterton Johnson
Charles Ira Button
Robert Ashton Lawrence

ASSOCIATE ALUMNI

President, John H. Converse, LL. D., Philadelphia, Pa.
Vice-President, Hon. Robert Roberts, Burlington
Secretary, Charles E. Allen, Burlington
Treasurer, James H. Macomber, Burlington
Obituary Committee, Hon. G. G. Benedict, Prof. J. E. Goodrich, Rev. Geo. Y. Bliss, Rev. S. L. Bates
Executive Committee, Hon. E. B. Taft, Hon. Elias Lyman, J. D. Denison, Charles A. Catlin, Prof. D. R. Dewey

Local Alumni Associations, designed to cherish the college spirit and promote the interests of the University in their several localities, have been formed as follows:

THE NEW YORK ASSOCIATION for New York City and vicinity:

President, Charles A. Hoyt, '58; *Vice-Presidents*, Prof. James R. Wheeler, '80, George L. Wheelock, '87; *Secretary and Treasurer*, Philip J. Ross, '95, [22 East 47th St.]; *Executive Committee*, D. L. Cady, '86, G. L. Wheelock, '87, R. S. Royce, M. D. '89, C. S. Grow, '91; *Committee for informal meetings*: W. C. Flanders, '90, P. J. Ross, '95, H. W. Clark, '97.

THE NEW ENGLAND ASSOCIATION, meeting in Boston: *President*, Charles A. Catlin, '73, Providence, R. I.; *Vice-Presidents*, Prof. Davis R. Dewey, '79, Prof. F. E. Woodruff, '75, Frank H. Clapp, '86, M. D., Hon. Elias Lyman, '70, Albert Nott, M. D., '69; *Secretary and Treasurer*, Karl A. Andrén, '95, Beverly, Mass.; *Assistant Secretary and Treasurer*, George P. Anderson, '96 [office of the Boston Globe]

Chaplain, Rev. John W. Buckham, '85; *Executive Committee*, George W. Benedict, '93, A. Cooper, M. D., '88, E. H. Deavitt, '93, George W. Stone '84, A. A. Gibson, M. D., '77.

THE WASHINGTON, (D. C.) ASSOCIATION: *President*, James S. Morrill, '80; *Vice-Presidents*, Tracy L. Jeffords, '86, Prof. Kirby Smith, '84, Prof. C. K. Wead, '71; *Secretary and Treasurer*, Vinton A. Clark, '98, [Dept. of Agriculture]. *Executive Committee*, L. F. Englesby, '76, Rev. George B. Stone, '85, P. J. Finn, ('85,) H. F. Perkins, '98, C. B. Sornborger, '90, A. G. Safford, ('63), L. B. Doten, '97.

SUMMARY

Graduate Students, 5; Undergraduates, Classical, 81; Literary-Scientific, 65; Engineering, 74; Chemical, 26; Agricultural, 23; Special, 9, Total	283
Seniors, 51; Juniors, 63; Sophomores, 79; Freshmen, 76; Graduate Students, 5; Special 9; Total Academic Students	283
Medical Students, 1899	191
Dairy Students, 1899	49
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